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6. *The Mining Laws of Texas; Texas Mineral Lands*, by W. B. Phillips, and Tables of magnetic declination for Texas. 37 p. July, 1903. 25 cents.
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9. *Report of a Reconnaissance in Trans-Pecos Texas North of the Texas & Pacific Railway*, by G. B. Richardson. 119 p., pl., map. November, 1904. 75 cents.

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The Consolidation of Rural Schools With and Without Transportation

BY

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THE CONSOLIDATION OF RURAL SCHOOLS, WITH AND WITHOUT TRANSPORTATION.

By the Consolidation of Rural Schools is meant the discontinuance of several small one-teacher schools within a given district or neighborhood, and the maintenance instead of one larger school, with several teachers, at some point near the center of this area. When this central school takes the place of a large number of small schools, or when the area ministered to by this one school is very large, the pupils from those parts of the district far removed from the school house are transported to and from school in wagonettes at the public expense. The wagonette hire and drivers' salaries are paid out of school funds just as are teachers' salaries or fuel bills. Experience has shown that this expense can usually be met without any increase in appropriation, out of the amount saved through the greater economy in running one large central school instead of four, five or six scattered little schools. When only two or three schools are consolidated and when none of the puplis are placed thereby at great distance from the central school, free transportation need not be provided.

This plan of transporting pupils at public expense from outlying districts was first authorized in Massachusetts in 1869, where they found that it was cheaper to transport the pupils in the country to the well established village schools than to support even a poor grade of separate country school. In other States the rural districts which have no central village soon adopted the plan of consolidating their own little scattered rural schools, sometimes with, sometimes without, transportation. Among the States now practising consolidation are Massachusetts, New Hampshire, Vermont, Maine, Connecticut, New Jersey, Pennsylvania, Virginia, West Virginia, North Carolina, Georgia, Florida, Ohio, Indiana, Wisconsin, Michigan, Minnesota, Missouri, Iowa, Idaho, Kansas, Nebraska, and North Dakota. It is practised also in Victoria, Australia, with great advantage. In all these states it has proved successful and is rapidly spreading.

REASONS FOR CONSOLIDATION OF SCHOOLS.

The majority of our rural schools are taught by young, inexperienced,* and often poorly educated,† and inefficient teachers, working in little one-room school houses with practically no library, maps, charts, or other school equipment. These teachers must conduct from twenty-five to thirty-five recitations a day in all subjects, ranging from A, B, C's to Algebra. As a result, our rural schools, with a few notable exceptions, are truly wretched. Furthermore, with the present poor pay, and with the impossible task imposed upon the rural teacher, we can hope for little improvement in the quality or training of those undertaking this hopeless labor. Even if we could have every rural teacher better than the few best ones are, the well-nigh complete absence of equipment and the endless round of lessons each day necessitated by having all grades of pupils under one instructor would paralyze the best teacher. If any plan can be found which will even partially obviate these difficulties without entailing an expense beyond what the present schools cost, or beyond what our people are willing to contribute for improved schools, it should have our most earnest consideration.

ADVANTAGES OF CONSOLIDATION.

The experience with consolidation elsewhere has shown that it does accomplish the following results:

1. Better school buildings and equipment can be secured. It is cheaper to build and keep up one four or six-room house than four or six one-room houses. Experience has shown, too, that the community pride in a large, successful school will bring better financial suport.

2. The expense for teachers is less. The most extravagant plan possible is to have one teacher teaching children of all ages, often

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*The average length of service of rural teachers in Texas is less than 4 years of 4½ months each, or a total of 18 months. About 3000 new teachers are taken into our schools each year.

†Of the 10,128 white teachers in rural schools in Texas during the year 1905-1906, 6384 had second grade and 462 had third grade certificates. Even a first grade certificate demands a bare high school education.

hearing fifteen or twenty small classes a day with only one, two or three pupils in each class. Several times this many pupils could be taught in each class just as well as not. There would be few more classes in a consolidated school of a hundred and fifty pupils than there are in a one-room school of twenty-five pupils. By combining six such schools the work could easily be much better done by four teachers, and still give three times as much time to each class, thus saving the cost of two teachers and giving better service at the same time. Even where the single teacher schools are crowded with sixty or eighty pupils, as many are in Texas, consolidation would still be valuable, for four teachers can handle two hundred and forty pupils far better in a well classified school than one can handle sixty in an ungraded school. As a matter of fact there are in Texas over 6000 one-teacher white schools. There are 533 with less than twenty pupils enrolled, and ninety-six with less than ten.* If we had taken actual attendance instead of enrollment, the number with less than twenty or less than ten pupils would have been much larger. In some places in Texas the length of the school term could be actually doubled without any additional cost if consolidation were practised.

3. Better teachers can be secured, because of the increased pay, or the increased length of school term, or because of the fact that the work with a smaller number of classes and in company with several fellow teachers is far more stimulating and attractive.

4. There is possibility of intelligent supervision of teachers, which is now impracticable, with dozens of little schools scattered all over each county.

5. With a larger area to draw from, better trustees are more likely to be secured. The possibility of one prominent family "running" the school and bulldozing the teacher is also lessened.

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*These figures are exclusive of independent districts and community counties. Furthermore, a few counties had not reported at the time these statistics were gathered. These figures were gotten by a careful compilation from the county reports in the office of the State Superintendent of Public Instruction, but the correct number in each case is undoubtedly far above that given here. Our Legislature and our county officials have not yet learned the value of statistics, and have made it well-nigh impossible for an investigator to find out the facts. [These facts were gathered in 1903. As is indicated in the supplement to this edition, there has been some improvement since that time, but this is not great enough to invalidate any conclusions drawn in this Bulletin.—A. C. E.]

6. Better grading and classification of the pupils is possible. As mentioned above, there is almost as great variety of pupils in a school of forty as one of a hundred and sixty, and hence the one teacher must, in order to get along at all, throw together in the same class pupils of very different knowledge and ability. With four teachers to conduct classes there is greater opportunity for providing a class to fit each pupil's stage of advancement.

7. Larger classes, if not too large, add to the interest of pupils and teachers. The higher classes especially need this at present in our rural schools. The one or two pupils in these classes have little stimulus to higher work. The presence of a larger number of advanced pupils and the possibility of giving these the needed attention will serve to broaden the life of the larger boys and girls and hold them in the school.

8. Each teacher will have fewer classes and hence longer time to devote to his own preparation and to the teaching of each lesson.

9. With four or six teachers in one school it will be possible to add other subjects and enrich the curriculum. One teacher could teach manual training along with mathematics or some of the sciences. The rudiments of agriculture, horticulture, etc., along with nature study, have been taught with great success in some of these schools in the middle west. With nature's laboratory free at the door, and land almost free, and with fairly good text-books on agriculture now published, there is no reason why our farmers' boys should not be prepared in school to carry into the work of agriculture the same training and scientific knowlege which have improved upon and displaced rule-of-thumb methods in other fields of human endeaver. The splended work done in agriculture in the schools of other states and countries, shows that this is entirely practicable*.

If to consolidation transportation is added, as is necessary where many single schools are combined into one, the following additional advantages arise, as has been shown in actual experience:

*The University has published a bulletin giving full account of the methods employed in teaching agriculture in the public schools, showing what has been done elsewhere, and how, and outlining a plan for courses in our own schools. This will be sent free on request.

1. The attendance is more regular and tardiness is eliminated.
2. The attendance is larger.
3. Pupils are healthier. They do not have to walk through mud or rain and then sit in wet shoes all day.
4. The pupils are under the care of some responsible person all day, and hence the girls are protected on the way to and from school, and the boys are removed from the temptation to quarrels and other misconduct on the way to and from school.
5. The central building with its assembly room, library and piano affords a social and intellectual center for the community. The same wagonette which carries the children to school in the day may bring the parents together at night or on Saturday for school entertainments, public lectures, debating clubs, or farmers' institutes.

In short, the consolidated rural school brings to the country that thing the absence of which has driven so many families to town and so many boys off the farm, namely, a well-classified, well-equipped, well-taught school. It will be no longer necessary for the well-to-do farmer to move to town to educate his children, nor will he need to spend his money on boarding schools and subject his boys to the moral dangers arising from life in a city away from parental care. The consolidated rural school will enable parents to furnish their children a first-class school, and at the same time keep them in their own home and under their own care, where they may be of service to the home, and receive that part of education which the home alone can give.

OBJECTIONS AND DIFFICULTIES.

As might be expected, human ignorance and human selfishness have always led people to oppose the consolidation of schools when first proposed. To those local tyrants who are determined to run things their own way, or to those who think that their friend or kinsman must be furnished a little school to teach, regardless of the welfare of the children or of the community, nothing can be said. The power of the local tyrant is undoubtedly lessened by consolidation, and the more incompetent ones of the local teachers will be the first to lose their jobs. The sentimental objection to closing the

little school house down the lane will likewise be unaffected by rational considerations. Other objections based on neither greed nor sentiment are brought which deserve consideration. It is urged against consolidation:

1. It is too expensive. In answer to this it can be said that as a matter of fact the expense per pupil has been reduced more often than increased, in spite of the fact that a better school has been provided and the cost of transportation is added. In the quotations given later there is one case in which consolidation reduced the cost from $16.00 to $10.48 per pupil enrolled, in another from $5.03 to $2.31, and gave a better school because of more intelligent plan of organization. Other cases may be seen in the quotations given later in this bulletin. It has been pointed out above why the expense for both teachers and buildings may be actually lessened.

2. The farms, remote from the central school, will depreciate in value. As a matter of experience, the value of the farms, as far as we have found, has invariably increased in the entire district. Certainly the presence of a good school should add to the value of property within the entire range of free transportation.

3. Pupils in going so far to a central school have to leave home too early and return too late, or they are too much exposed to weather in the long drives to and from school, or are in danger from immoral drivers. As a matter of fact, it takes no longer to ride three of four or five miles—the greatest distance for the most distant pupils—than to walk half that distance, which is frequently done. Careless or immoral drivers are a real danger which must be carefully guarded against. To insure comfort and safety in conveyance the rules governing transportation should require a rain-proof wagonette, with plenty of robes, a safe team and reliable driver. The drivers should be as carefully chosen as the teachers. Frequently some of the parents do this work, or some older responsible pupil acts as driver and is thus enabled to remain in school and complete the course. The driver calls at each home at a fixed time and is required to start and complete his work at fixed hours. In all the districts we have studied 7:15 is earliest hour at which a driver called for a pupil. In this case the pupil lived five and a half miles from the school. Experience has shown

that pupils get home earlier and more safely in this way than under the present plan.

4. There is lastly a natural fear that our country schools may get too large classes, become too mechanically graded, as are many city schools, and crush out the individuality of the pupils, to which the old country school gave such opportunity for development. It is a fact that many strong personalities have come from our old-field schools. In a one-teacher ungraded school each individual gets so little attention and aid from the teacher that the pupil is left pretty much to educate himself, or not, as he chooses. In cases of geniuses this may be an advantage. Geniuses are possibly as often retarded as helped by teachers, and since in the one-teacher school the pupil gets less help from the teacher, the individual genius can better go his own gait. However, most pupils are not geniuses and are helped by teachers, else we should never have schools at all. If we are to have them at all, let us organize them so that the teacher can best help their pupils. It is not at all necessary for the consolidated rural school to organize and grade the life out of itself. The rural schools have the advantage of the experience of the city schools and need not repeat their errors. The problem of respecting and developing individuality in large well-classified schools has been well met in many places by wide-awake and thoughtful teachers even in cities, where the task is far more difficult than it ever will be in the country. Experience again has shown here, what reason foretold, that the consolidated school not only does not crush out individuality of the pupil, but, on the contrary, the bright pupil in the larger country school, where all the boys of a whole district are gathered, has better opportunity for development of his special talent because of the stimulus and inspiration coming from contact with other bright minds of his own age.

There are just two very genuine difficulties in the way of consolidation: namely, bad roads and sparse population. These make it entirely impracticable in many parts of Texas at the present time. But even after we eliminate all this vast area there remain hundreds if districts in the State in which consolidation is entirely feasible and urgently needed. Texas is a whole empire in itself, presenting all educational problems and all classes of con-

ditions. There are enough places ready for consolidation to occupy our best efforts for several years, after which many more places will be ready, for it is a matter of only a few years when roads will be built even in the black lands.

THE SITUATION IN TEXAS.

With over 6000 one-teacher white schools, with more than 600 schools enrolling less than twenty pupils, and over 100 enrolling less than ten,* Texas would seem to offer a large field for Consolidation of Schools. If, in connection with this fact, one but considers the utter absence of equipment and the interminable list of lessons which must be heard each day by the teacher in each of the one-teacher schools, the need for consolidation becomes too obvious for discussion. For the enlightenment of those not familiar with the hopeless task now set many of our rural teachers, we give here two examples of the daily programs in actual operation.

A MILAM COUNTY ONE-TEACHER SCHOOL DAILY PROGRAM.

Singing	8:45 to 8:55.
Roll call	8:55 to 9:00.
Spelling class, A	9:00 to 9:05.
Spelling class, B	9:05 to 9:10.
Chart class	9:10 to 9:20.
First Reader	9:20 to 9:30.
Higher Arithmetic	9:30 to 9:45.
Lower Arithmetic, No. 1	9:45 to 10:00.
Lower Arithmetic, No. 2	10:00 to 10:15.
Recess	10:15 to 10:30.
Chart class	10:30 to 10:35.
First Reader	10:35 to 10:45.
Second Reader	10:45 to 10:55.
Civil Government	10:55 to 11:05.
Third Reader	11:05 to 11:20.
Fourth Reader	11:20 to 11:35.
Texas History	11:35 to 11:50.
United States History	11:50 to 12:05.
Noon recess	12:05 to 1:05.

*See footnote, page 3.

Number class	1:05	to	1:15.
Chart class	1:15	to	1:25.
First Reader	1:25	to	1:35.
Elementary Geography	1:35	to	1:50.
Grammar School	1:50	to	2:00.
Physical Geography	2:00	to	2:15.
Second Reader	2:15	to	2:25.
Hyde's Language Lessons, I	2:25	to	2:40.
Hyde's Language Lessons, II	2:40	to	2:55.
Recess	2:55	to	3:10.
Chart class	3:10	to	3:15.
First Reader	3:15	to	3:25.
Physiology, 2d book	3:25	to	3:40.
Physiology, 1st book	3:40	to	3:55.
Spelling, B	3:55	to	4:05.
Spelling, A	3:55	to	4.05.
Writing, whole school	4:05	to	4:20.

A total of thirty-two lessons, ranging from A B C's to Physical Geography and Civil Government.

Another one-teacher school program in daily operation:

Writing, 8:50 to 9:00.
U. S. History.
Texas History.
General History.
First Reader.
Second Reader.
Third Reader.
Fifth Reader.
Recess, 10:20 to 10:30.
Higher Arithmetic.
Third Arithmetic.
Second Arithmetic.
First Arithmetic.
Grammar (Sisk).
Grammar (Hyde).
Language.
First Reader.

Noon recess, 12:00 to 1:00.
Rhetoric.
First Reader.
Physiology (Conn).
Physiology, Lower.
Physical Geography.
Second Reader.
Third Reader.
Political Geography.
Elementary Geography.
Higher Algebra and Elementary Algebra (at same time).
Recess, 2:50 to 3:00.
First Reader.
Civil Government.
Geometry.
Higher Speller.
Second Speller, definitions.
Dismiss.

Here is a teacher actually attempting to teach each day: three different history classes; nine reading classes; four arithmetic and two algebra classes; two grammar, one language, one rhetoric, and two spelling classes; two classes in geography, and one in physical geography; two classes in physiology and one in civil government; making a total of thirty-one classes, covering almost a complete primary and grammar school curriculum with a few high school subjects added. The task is manifestly an impossible one. It is from three to five times what is expected of good teachers in our best city common schools, where usually only one grade of lessons is taught by one teacher, or in the high schools, where one teacher usually teaches only one, two or three subjects.

The above daily programs give no exaggerated impression of the difficulty usually present in the one-teacher schools in Texas.

In order to introduce consolidation in Texas there is fortunately no new law required. The number and location of schools within any district are entirely within the control of the trustees of said district; hence, all the legal procedure necessary for consolidating,

either in whole or in part, the schools within any district is that the trustees so order it.*

If wider consolidation is desired, two or more adjacent school districts may, whenever the commissioners court decree, be consolidated.† In places where complete consolidation of neighboring districts is not feasible the well-known transfer law will usually cover all needs when establishing central consolidated schools near a district line.*

It will be necessary in each case where a large new building is demanded, or where transportation is needed, that the expense of building and of transportation be met by local tax, since the state funds can be used only for the payment of teachers, of the treasurer and of the census taker. This small local tax must be raised, under the present or any other system, if our schools are ever to be worthy of the name. There are now in Texas more than 2207 districts levying a local tax, and the number is rapidly increasing. The rapid progress of this movement in the last few years is a most hopeful sign. The large central school fund in Texas came near becoming a menace to the advance of our schools in leading many of our citizens to think that no local tax is necessary. As a matter of fact, the state funds provide only about $5 per year for each child, whereas in the better educated states from $20 to $38 per year per child is provided, largely through local taxation. Of all the funds expended on public schools in the United States as a whole, 80 per cent is derived from local taxation, while in Texas as yet only about 33 per cent is raised by local tax. A moment's consideration will show how hopeless is the situation without a local tax. Forty pupils are a large number for one teacher, even in a well-graded school. This number at $5 per pupil would furnish just $200 per year—a salary not likely to command a very high order of teacher. The local tax is an absolute necessity under any plan. The amount of local tax which would be demanded to establish good rural schools under the present wasteful plan would be very great, but under a rational

*See Sec. 121, School Laws of Texas, 1905.

*See Sec. 101, School Laws of Texas, 1905; also Sec. 59 for County Line District.

*See Sec. 58, School Laws of Texas, 1905.

system of consolidation the tax demanded for really good schools need not be burdensome. Where a district is "Independent" and can issue long-time bonds, the expense of a large four or six-room consolidated school building is easily met. The action of the legislature in granting to common school districts also the power to issue bonds for building purposes has removed one of the serious obstacles to consolidation and to the obtaining of good school houses in rural districts.* Three thousand dollars in thirty-year 5 per cent bonds will cost $150 the first year for interest, and $100 per year sinking fund, the interest growing $5 less each year for thirty years. Thus $250 would be the cost the first year and $105 the last year, or an average of $177.50 per year for thirty years for a $3000 school building. The cost of maintenance would, of course, depend upon local conditions.

As examples of what might be done in hundreds of districts in Texas, we give facts, with charts, for several districts of which we happen to know. It is not claimed that these are the best places in which to begin consolidation in Texas. There are probably many other places unknown to us which are even better adapted to immediate consolidation.

Diagram No. 1 is of a district in Bexar county which has been furnished us by Supt. P. F. Stewart, to whom we are also indebted for the following facts: "In this district five schools are at present maintained with an enrollment of 228, and an average

*The common school districts are, however, still restricted by the constitution to a two-mill limit of school tax, while the independent districts may levy a five-mill tax. Until this limit of two mills for school tax is raised, it will be impossible to pay either for good school houses or good teachers, except in very favorably located districts. The present legislature has very wisely placed before the people an opportunity to vote for an amendment to the constitution increasing the tax limit in common school districts from two to five mills. If the friends of education will see to it that this amendment is carried, it will make possible consolidation and good schools in thousands of rural districts, which under the present constitutional restrictions are helpless. The present legislature has also ordered a vote on that clause in the constitution which requires a two-thirds vote of the taxpayers in order to issue bonds for school buildings. At present we are in the absurd position of being able to issue bonds for a city hall or public park or any other kind of enterprise on a bare majority vote, but in order to issue school bonds, we must secure a two-thirds vote of taxpayers. The removal of this special obstruction to educational progress is essential to the rapid development of an adequate school system in Texas.

attendance of 200. If these schools were all closed and one five-room school established at the point indicated on the diagram, three routes would need to be laid out for the transportation of pupils. One route six miles long, one seven, and one eight, as indicated in the diagram, would pass within easy reach of 80 per cent of the children needing transportation. The majority of

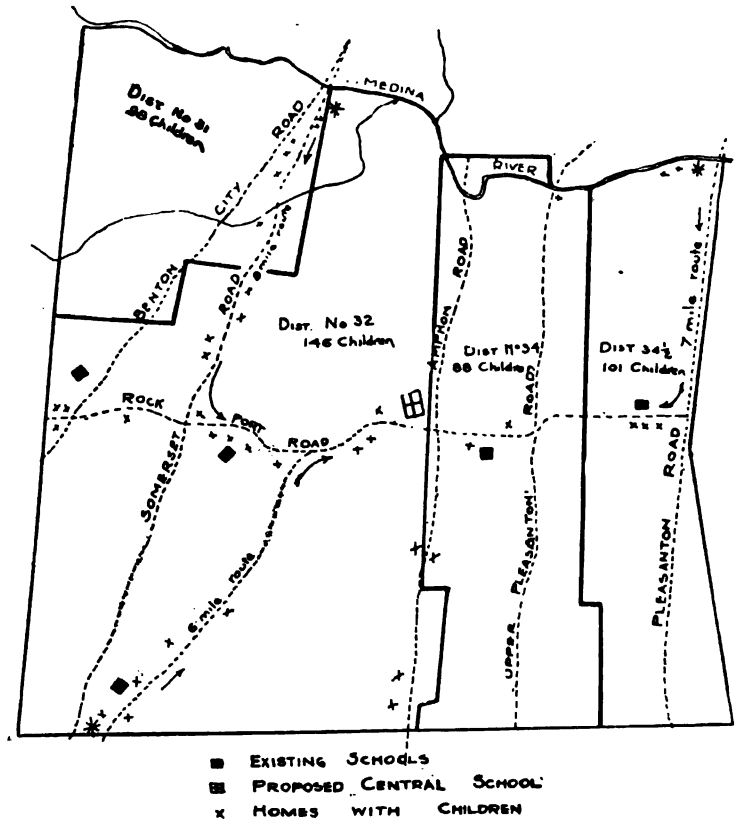


Diagram No. 1, representing a district in Bexar county needing consolidation of Schools.

the children would be within walking distance of the school. The roads on all routes indicted are fairly good and could be made good with but slight outlay of labor. At present six teachers are employed at a cost of $300 per month. The quality of these schools is about on a par with average ungraded rural schools.

"The probable cost of a new five-room building would be $2300. The five old buildings would sell for about $800, leaving a balance of $1500 to be met. Thirty-year 5 per cent bonds to cover this amount would cost on the average $88.75 per year. A good principal could be secured for $75 per month, four fair assistants for $50 each per month. The total expenses, then, for an eight-months' term would be as follows:

Tax for building	$ 88 75
Principal's salary, eight months, at $75	600 00
Four teachers, eight months, at $50 each	1,600 00
Transportation, eight months, at $100	800 00
Repairs and incidentals	180 00
Total	$3,268 75

To meet this expense would be the following:

State apportionment (about 400 children)	$2,000 00
Local tax now levied	300 00
Over and under age pupils	300 00
Total	$2,600 00

"This would leave a balance of $668.75 to be met by local tax or subscription. The taxable values in this district are approximately $196,000. A tax of less than five mills would raise the local tax from $300 to $975, thus furnishing all the funds needed to establish and maintain this consolidated school. Here we would have an eight-months' school, a large, well-equipped building, a well-trained principal, a school well graded, so that the number of classes to be taught each day by each teacher would be less than half of what is now required in the one-teacher schools. Under these conditions the teachers could prepare each lesson better and teach it more effectively. Furthermore, with four assistants to teach the common school grades, the principal would be able to introduce the most substantial of the high school studies, and thus bring to the door of our agricultural population the 'Peoples' College,' which would prepare the boys and girls at their homes either for intelligent citizenship or for entrance into

the higher institutions of learning. As soon as our higher institutions furnish a supply of teachers able to teach agriculture and manual training, these subjects could easily be added to the course. Under the present plan of one-teacher schools this is impossible.

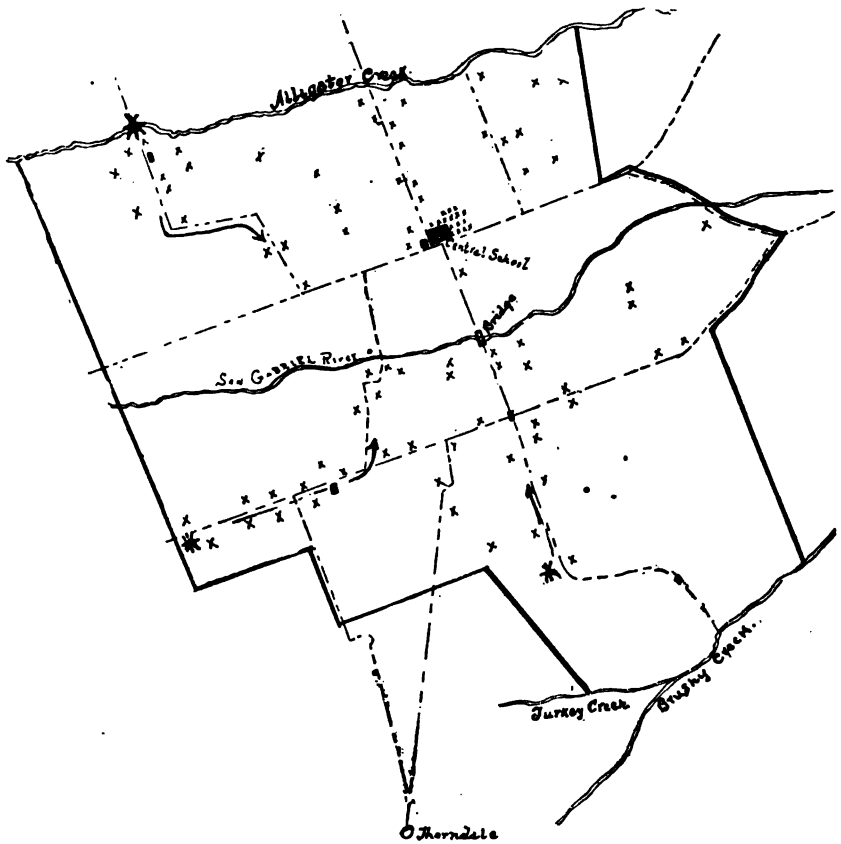


Diagram No. 2, representing a district in Milam county needing consolidation of schools. ☼ Represents existing schools; x represents homes with children; * represents starting points for wagonette; - - - represents roads wagonette routes.

There is simply no comparison between the present school work of four months in the little one-teacher schools and the work which could be done under a rational plan of consolidation."

Diagram No. 2 is that of a district in Milam county, which was

furnished by Supt. F. J. Clements, to whom we are indebted also for the following facts:

"In this district there are at present four schools, employing five teachers, with 195 pupils enrolled, and an average attendance of about 110. If these schools were closed and a four-room central school established at the point indicated on the diagram, much the larger part of the pupils would still be within walking distance. For those distantly located three transportation routes would suffice, one three miles, one four miles, and one four and a half miles long. The roads on all routes are fairly good.

"At present the five teachers cost $230 per month for an average of five and a half months each year; total, $1215. Repairs and other expenses bring the grand total to $1275. This gives a five and a half months' schooling, the quality of which may be judged by the program sent. The probable cost of a new four-room central building would be $1800. The present old buildings and school property would sell for $600, leaving $1200 to be met by local tax or subscription. Thirty-year 5 per cent bonds to cover this amount would cost the district on an average less than a hundred dollars per year. A good principal for the school would cost $75 per month, and fair assistants $40 per month. The total expenses, then, for an eight-months' term of this well-graded and competently taught school would be as follows:

Tax for building	$ 100 00
Principal's salary, eight months at $75	600 00
Three teachers, eight months, at $40	960 00
Transportation, eight months, at $90	720 00
Incidentals	100 00
Total	$2,480 00

To meet this expense there would be the following receipts:

State and county apportionment (about 195 pupils)	$1,030 00
Present local tax	250 00
Pupils over and under age (probably)	200 00
Total	$1,480 00

"This leaves a balance of $1000 to be met by local taxation. Only two districts included in the proposed consolidated district collect a local tax at present. If the property in the four districts were assessed at one-half its market value, a four-mill tax would more than pay all expenses of a consolidated school. Since consolidation usually increases average attendance from 40 to 50 per cent, the average cost per month per pupil would be about $1.80 per month instead of $2.10, the present cost, thus making an actual decrease in per capita expense. We would thus have a good well-graded school with an eight months' term in place of the four little schools now struggling against hopeless difficulties for five and one-half months each year. The cost would be almost a fourth less if the school lasted only six months. In this case, however, it would not be possible to get as good quality of teachers. The advantages of the consolidated school over the present plan are so apparent and have been so often stated that I will not enumerate them here."

Diagram No. 3, which represents a district centering around Alvin, was furnished by Supt. R. R. Foster, to whom we are indebted also for the following facts:

"In the district surrounding Alvin there are, as indicated, five public schools, one four miles from Alvin, another three, another two and a half, another one and a half, and another one and a quarter. These schools employ for six months six teachers, enroll 220 pupils, and have an average daily attendance of about 140 pupils. If these schools were closed and all the pupils came to the Alvin schools, a large majority would still be within walking distance, and those distantly located could be transported in two wagonettes, each having a route six miles long, as indicated on the diagram. These roads are good.

"Alvin is an independent school district, with 190 white scholastic population, drawing $950 of State funds, and with a local tax of five mills, yielding $1250. It expends $2300 per year on its schools, which are open for eight months, and employs a principal and five teachers. The school building has six rooms capable of accommodating at present 240 pupils. If the rural pupils were brought to this building, five additional rooms would be needed. This would cost, approximately, $5000. The present

rural school property would sell for about $1500, leaving $3500 to be raised. The cost of 5 per cent thirty-year bonds to cover this would be less than $300 per year. No extra principal would be needed, but three extra teachers would, at $50 per month, cost $1200 per year. The cost for transportation would be about $125

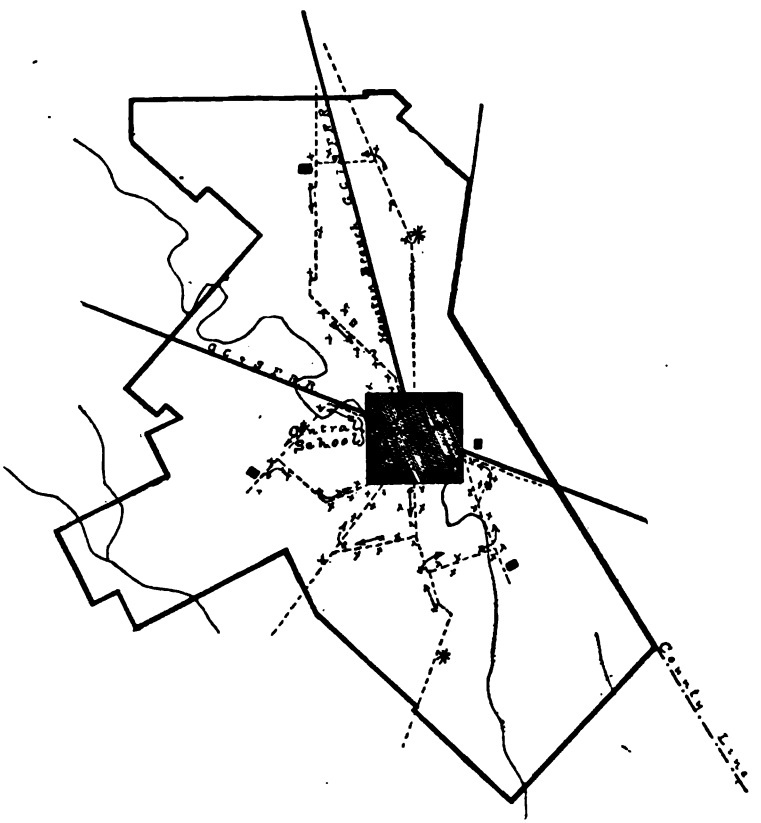


Diagram No. 3, representing a district in Brazoria county surrounding Alvin, and presenting opportunities for consolidation of schools. ☼ Represents existing schools; * represents starting point for wagonettes; - - - represents roads and wagonette routes.

per month for eight months; total, $1000. The total extra cost above the present expenses of the Alvin schools of providing for all these pupils for eight months in Alvin would then be about $2500 per year. The cost of the five separate rural schools is

now $345 per month for six months; total, $2070. This leaves $430 as the total extra cost to the district for substituting eight months of a well-taught graded school for six months of our present unclassified and poorly-taught schools. The taxable values in this district outside of Alvin are about $300,000. A local tax, then, of two mills would cover this expense."

Diagram No. 4 does not represent exactly the present district

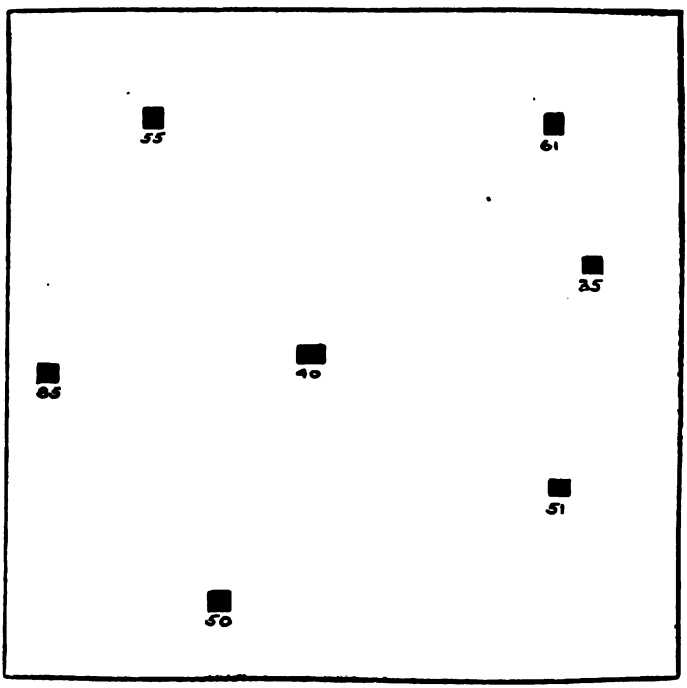


Diagram No. 4, representing an area five miles in the northeastern part of Travis county, the black squares represent existing schools, the figures beneath indicating the number of pupils enrolled.

lines, but an area in the northeastern part of Travis county five miles square. The exact lines of the present school district could not be gotten without a deal of effort that would hardly have been justified. While the present district lines would vary somewhat from this, the difference would not be enough to seriously interfere with the statements made below. We are indebted to Supt.

Will Brady and to Judge Z. T. Fulmore for assistance in securing information about this district.

There are at present in this district seven schools, employing seven teachers, enrolling over three hundred pupils, with an average daily attendance of about two hundred and twenty-five. These pupils could be better cared for by five teachers in a five-room building near the center of the district. The few pupils beyond walking distance could be conveyed to school. The new building would cost about $2500. The present property would sell for about $400, leaving $2100 to be raised locally by subscription or taxes. This, in thirty-year 5 per cent bonds, would cost on an average less than a hundred and fifty dollars per year. The cost, then, of a six-months' school would be as follows:

Building tax	$ 150 00
Principal, six months, at $75	450 00
Four teachers, six months, at $50	1200 00
Transportation, six months, at $100	600 00
Incidentals	25 00
Total	$2425 00

To meet this there is at present only the state apportionment of about $2000. The district would have to raise, therefore, by local tax, $425. The taxable property in this district is listed at about $300,000, which at two mills tax would furnish the additional funds required to give this whole district a well-graded six-months' school. This school would be far better than the present schools, but still would have too many pupils to the teacher even when well-graded. Two additional teachers and two extra rooms would add about seven hundred dollars more of expense, but would give a good school still for less than a four-mills' tax.

As there is no central hamlet of 200 inhabitants in this district or those shown in Milam or Bexar counties, it is impossible under the present constitution for these people to incorporate as an independent district and levy a local tax of more than two mills.* In the districts fortunate enough to include a village of 200 in-

*There are only 515 independent districts in the entire state.

habitants the law does not stand in the way of progress by preventing taxation above two mills, but in the thousands of strictly rural districts the constitution, by forbidding the establishment of independent districts and forbidding a tax of more than two mills, absolutely precludes the betterment of our rural schools. Friends of education must see that this obstacle to progress is removed.

A very limited study of the location of school houses in a few counties has disclosed a great need in many districts for consolidation of two or more small schools, without transportation. The multiplying of little half-starved schools is a great mistake which earnest school trustees should correct at once. Several places have come under our notice in which the school term could be practically doubled by simply putting two little schools into one, and even then no pupil would be at an impossible distance from the school.

Texas will never attain the prominence and power which the fertility of her natural resource and the splendid native manhood of her people merit until to native genius are added education and training. Nothing is so costly as ignorance and lack of skill. Texas can no longer afford to develop so small a portion of her vast physical and mental resources. The State with its fertile fields and immense area must ever be largely agricultural and its population rural. The men and women who will manage the farms must be educated or fall behind in competition with other sections of the country which are introducing educated and trained workers and scientific methods of work. The rural schools must furnish this education. The most economical plan, the most feasible plan, is the consolidation of the present wretched little schools into larger central schools, better equipped, better classified, better taught, to which all the boys and girls of the whole district are brought to acquire that training and education needed to meet the ever-increasing demands made by our growing civilization.

In the increased prosperity which these educated minds and skilled hands will bring, all alike will share, whether they be farmers, land owners, merchants, workmen or professional men. Every Texan has a personal interest in pressing forward this movement for the better education of the backbone of our citizenship.

PRACTICAL EXPERIENCE WITH CONSOLIDATION IN OTHER STATES.

IOWA.

In Iowa sixty-three districts have adopted consolidation, and eighty districts have provided transportation. The most interesting case mentioned by Supt. Barrett, in his Report for 1901, is that of Buffalo Center district, in Winnebago county.* "Prior to October 1, 1897, the laws of Iowa provided that whenever the board of directors of any existing district township should deem the same advisable, and also whenever requested to do so by a petition, signed by one-third of the voters of the district township, it should submit to the voters of that township * * * the question of consolidation. If a majority of the votes cast were in favor of a consolidated organization, the district township composed of subdistricts became an independent district. Acting under this statute the people of Buffalo Center township, in Winnebago county, in 1895, formed an independent district, embracing the entire civil township, six miles square, and voted bonds, running for a period of ten years, for the purpose of erecting an eight-room building.

* * * * * * *

"At the time the township became independent it was not proposed to close the rural schools and transport the children. This was an after consideration, and arose from the demand upon the part of the people of the rural districts for better school facilities. On August 23, 1897, the residents of what was formerly known as sub-district No. 3 requested the board to furnish transportation for their children to a central school. The request was granted and the outlying school closed. On August 30, of the same year, the board arranged for the transportation of the children in districts Nos. 2 and 4. On August 17, 1898, the board, upon petition,

*Iowa Biennial Report of the Department of Public Instruction, 1901, pages 78-80.

arranged for the transportation of children from another ward. In April, 1899, the board, having noted the success with which their efforts had been attended, ordered all the rural schools in the district to be closed, except those in the extreme northeastern and southeastern portions of the township.

"Contracts for years 1900-01 provided for the transporta-

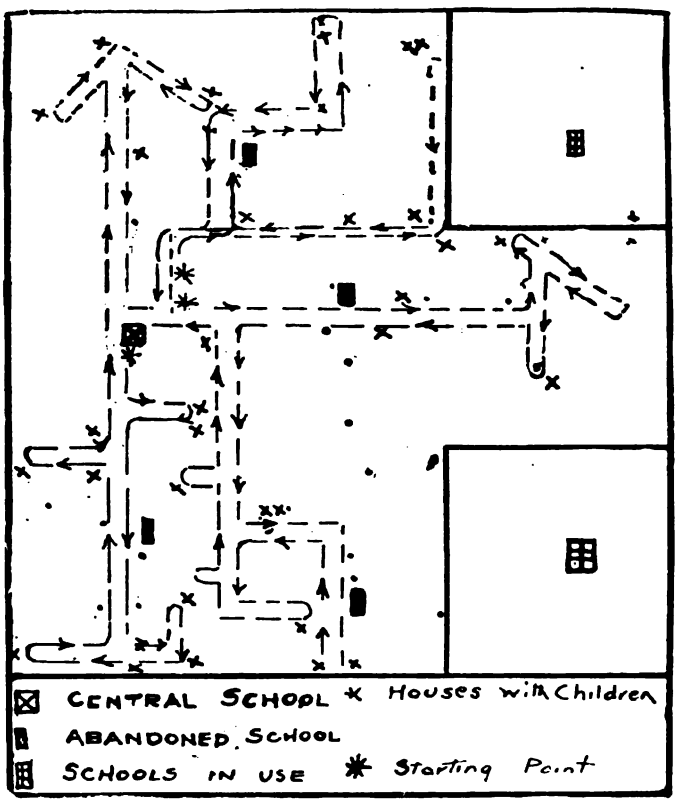


Diagram of Buffalo Center Township showing central school and routes of wagonettes in collecting pupils.

tion of ninety-eight children. Six routes are laid out, and one team is provided for each. For convenience, the routes are numbered 1, 2, 3, 4, 5, 6, beginning with the one running north from the central school. The greatest distance the children most remote on the different routes are conveyed is as follows:

Route 1.....3.50 miles.
Route 2.....4.50 miles.
Route 3.....5.50 miles.
Route 4.....5.75 miles.
Route 5.....5.50 miles.
Route 6.....6.25 miles.

"Winnebago county is one of the newer counties, and the roads have not been so thoroughly graded and drained as in the older sections, consequently the roads are not so good as in many parts of the State. * * * The time required to convey children to and from the central school depends upon the condition of the roads. * * * When very muddy the drivers begin collecting the children at from 7:15 to 8:15, according to the length of the route, and return them to their homes from 4:45 p. m. to 5:45 p. m.

"The compensation paid the drivers is $30 per month, except on Route 1 where only $25 are paid. For this amount they are required to furnish their own properly covered, strong, safe, suitable vehicle subject to the approval of the board, with comfortable seats, and a safe, strong, quiet team, with proper harness, with which to convey and collect safely and comfortably all the pupils of the school age on the route, and to furnish warm, comfortable blankets or robes sufficient for the best protection and comfort for each and all pupils to and from the public school building and their respective homes. They agree to collect all the pupils by driving to each and all the homes where pupils reside, and to get them to school not earlier than 8:40, and not later than 8:45. They are required to drive personally and manage the team, and refrain from the use of any profane or vulgar language within the hearing or presence of the pupils, nor may they use tobacco in any form during the time they are conveying children. They are not permitted to drive faster than a trot, and are required to keep order and report improper conduct on part of the pupils to the principal or president of the board. * * * To insure the contract being kept one-half the salary is held back each month.

"In 1894 the district township was composed of six sub-districts, and required six buildings, six teachers and six sets of apparatus.

* * * The average daily attendance of the entire district township for that year (six months) was 90. For the year ending September, 1900, eight teachers were employed for nine months, and the average daily attendance was 290. Estimating the average cost of tuition per month per pupil upon the total expenditure for school purposes we find it to have been $5.03 in 1894 under the plan of separate schools, while in 1900 it was $2.31."

INDIANA.

Superintendent Frank Jones, of Indiana, gives in his report for 1902* an interesting account of the consolidation which has taken place in one or more groups of schools in fifty-one counties in his state. The following remarks on the Hamilton township consolidated schools are typical.

"If any one has doubts of the wisdom of the consolidation of schools he should visit this school, located just outside the small village of Royerton. * * * Here are gathered each day 192 pupils, 118 of whom are conveyed at public expense in wagons owned by the township. Seventy-four pupils belong to the original Royerton district and of course continue to walk to the school.

* * * * * * * * * * *

Route No. 1	3.50 miles,	12 children.
Route No. 2	3.50 miles,	8 children.
Route No. 3	4.50 miles,	16 children.
Route No. 4	5.75 miles,	19 children.
Route No. 5	5.50 miles,	25 children.
Route No. 6	3.25 miles,	17 children.
Route No. 7	3.75 miles,	12 children.
Route No. 8	5.25 miles,	9 children.

"I made a personal inspection of this school on October 6, 1902. I asked the pupils to tell me what they thought of the plan, and lacked one vote of having it unanimously in favor of transportation. The one pupil who did not like it said that he could state no objections. The enthusiasm, happiness, industry and good health of the pupils were more marked than in any other rural school that

*Report of Superintendent of Public Instruction of Indiana, pages 729-735. Also *The Western Journal of Education*, pages 468-79.

I have visited. Here are gathered enough pupils to have in one class an active competition and genuine class enthusiasm. The 'hum-drum' of a one-pupil class is not seen here. The collection of enough country pupils with good habits, good health, and industry, with all the graded school advantages makes here a school even better than the best city graded school. All the teachers are qualified, well trained and experienced. A music supervisor visits them once each week, and the consolidation enables the county superintendent to supervise when necessary. * * * There is also a high school department with twenty-seven pupils, four of them young men who act as drivers for the wagons, and are thus kept in school. * * * The attendance is always good, and punctuality is nearly perfect, tardiness being almost unknown. The wagons are owned by the township, and cost from $80 to $125 each. * * *

"The following shows the comparative cost of the two plans:

DISTRICT PLAN.

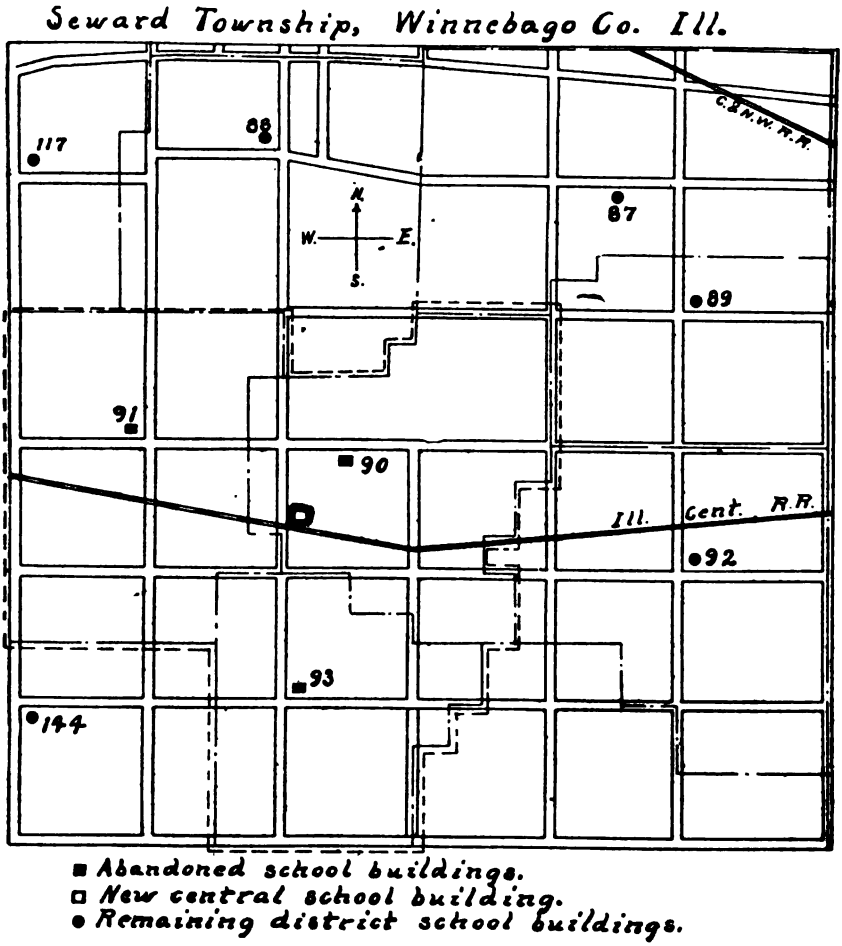
Salaries for seven teachers, seven months	$2,492 00
Institute fee for seven institutes	124 60
Fuel for seven rooms, $30 per room	210 00
Supplies for seven rooms, $10 per room	70 00
Repairs for seven rooms, $20 per room	140 00
Total	$3,036 60

CONSOLIDATION PLAN.

Salaries for four teachers, seven months	$1,442 00
Institute fees for seven institutes	72 00
Fuel for four rooms, $30 per room	120 00
Supplies for four rooms, $10 per room	40 00
Repairs for four rooms, $20 per room	80 00
Transportation at $8.87 per day	1.225 00
Total	$2,979 00
Difference in favor of consolidation	$ 57 50

OHIO AND ILLINOIS.

O. T. Carson, State Commissioner of Common Schools, in his report to the Governor of Ohio for 1896, says: "The expense of schooling the children has been reduced nearly one-half, the daily



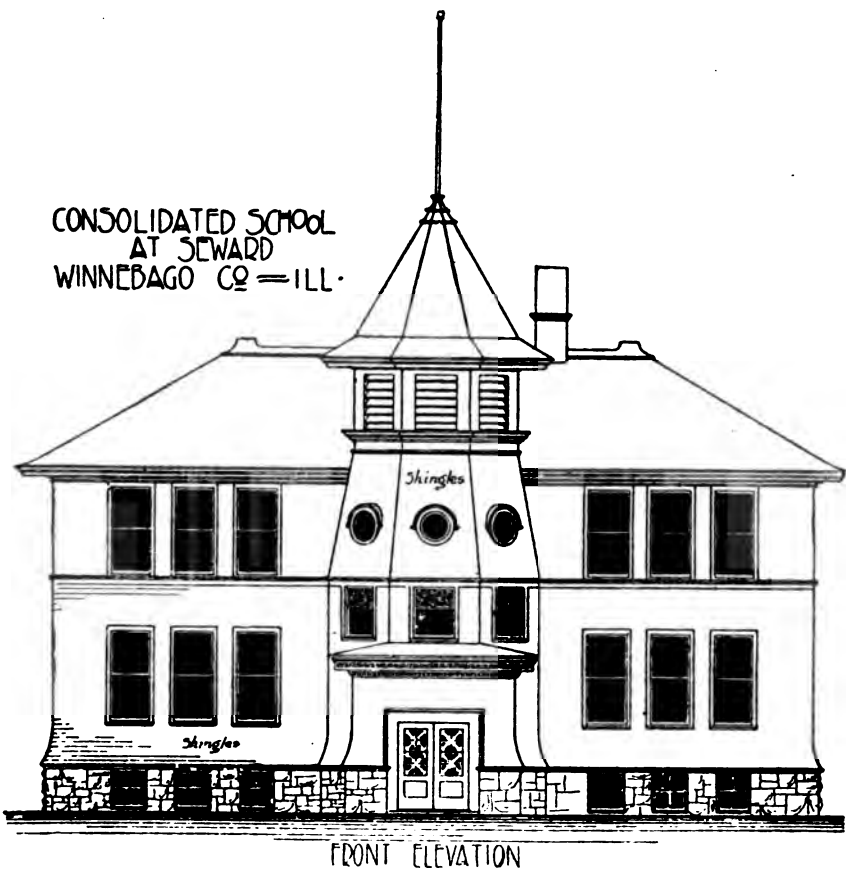
(Courtesy of Supt. O. J. Kern, Rockford, Ill.)

attendance has been very largely increased and the quality of work done has been greatly improved."*

*Western Journal of Education, page 427.

Superintendent O. J. Kern, of Winnebago county, Ill., after an inspection and study of the consolidated schools of Ohio introduced consolidation into his own county. The following is taken from the report which he made after this visit and inspection:

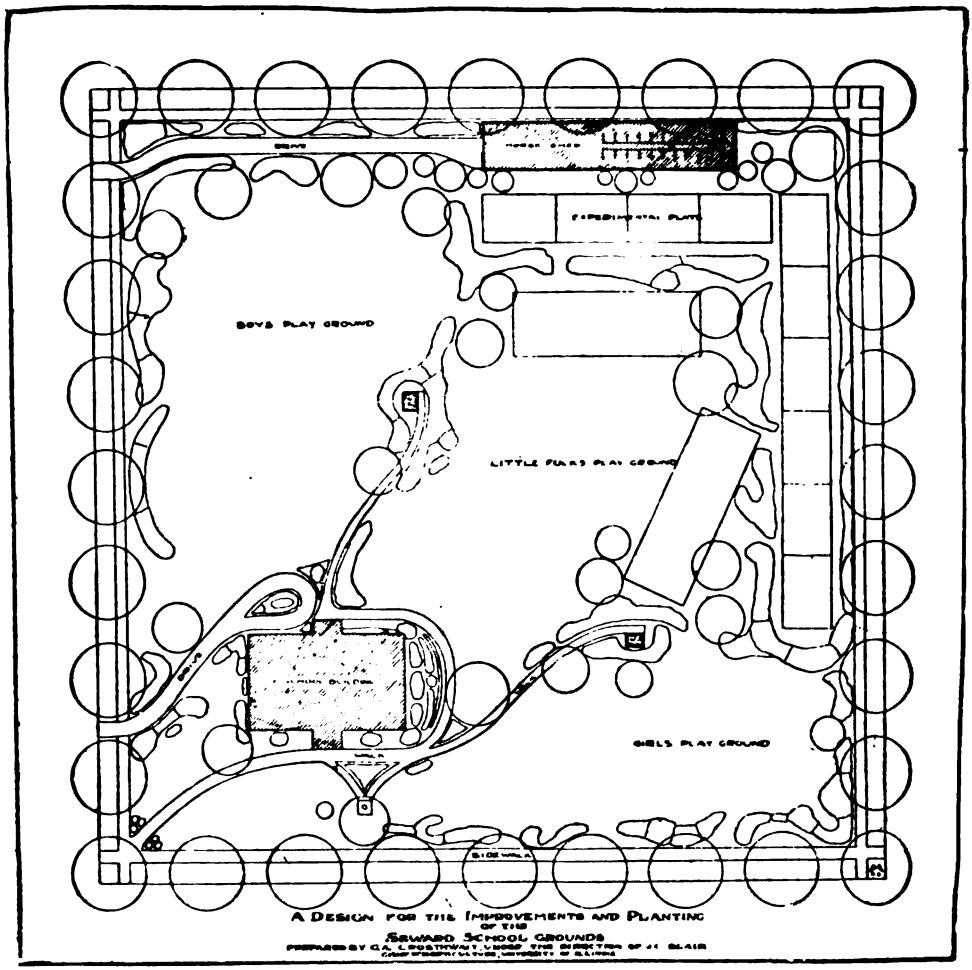
"The first place we visited was Perry, Lake county, where there



(Courtesy of Supt. O. J. Kern, Rockford, Ill.)

is a Township High School. The principal, Professor Morrison, is a pioneer in the matter of centralization. He assured us that the experiment was no longer an experiment, that the new movement was the logical solution of the country school problem, and that centralization of districts with transportation of pupils had come

to stay. It gave much better schools with but a slight, if any, increase in the cost to the township. The opposition to the plan has long since died out. This has been the testimony at every place visited thus far. * * *



(Courtesy of Supt. O. J. Kern, Rockford, Ill.)

MADISON TOWNSHIP.

"Madison township, Lake county, presents an excellent illustration of what may be called partial centralization, that is a grouping

of two, three or four schools into one without attempting to bring all the schools to the geographical center of the township. The latter method would not be practical because of the shape of Madison township. It is nine miles long and five miles wide. * * *

THE KINGSVILLE SCHOOL.

"As to the result of the Kingsville experiment, I can do no better than to quote from the *Arena* for July, 1899:

"' * * * The residents of the sub-districts of Kingsville township which have adopted this plan would deem it a retrogression to go back to the old sub-district plan. It has given the school system of Kingsville an individuality which makes it unique and progressive. Pupils from every part of the township enjoy graded school education, whether they live in the most remote corner of the township or at the very doors of the central school. The line between the country-bred and the village-bred youth is blotted out. They study the same books, are competitors for the same honors, and engage in the same sports and pastimes. This mingling of the pupils from the sub-districts and the village has had a deepening and broadening influence upon the former without any disadvantages to the latter. With the grading of the school and the larger number of pupils have come teachers of a highly educated class. Higher branches of study are taught, the teachers are more conversant with the needs of their profession. The salaries are higher; the health of the pupils is preserved, because they are not compelled to walk to school in slush, snow and rain, to sit with damp and perhaps wet feet in ill-ventilated buildings. Nor is there any lounging by the wayside. As the use of indecent and obscene language is prohibited in the wagons all opportunities for quarreling or improper conduct on the way to and from school are removed. The attendance is larger, and in the sub-districts which have taken advantage of the plan it has increased from 50 to 150 per cent in some cases; truancy is unknown. It has lengthened the school year for some of the sub-districts; it has increased the demand for farms in those sub-districts which have adopted the plan, and real estate therein is reported more salable. The drivers act as daily mail carriers. All parts of the township have been brought into closer touch and sympathy. The cost of maintenance

is less than that of the schools under the sub-district plan; the township has had no schoolhouses to build; it has paid less for repair and fuel. Since the schools were consolidated the incidental expenses have decreased from $800 to $1100 per year to from $400 to $600 per year. In the first three years following its adoption Kingsville township actually saved $1000.'

"Prof. York, superintendent of the above mentioned Kingsville

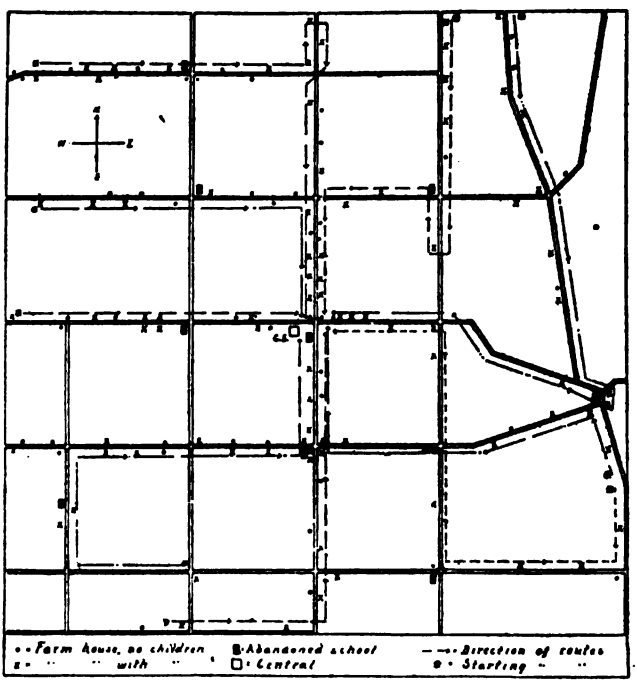


Diagram of Gustavus Township, showing the central school and transportation routes.
(Courtesy of Supt. O. J. Kern, Rockford, Ill.)

school, says, concerning the system of consolidation: 'The best physical laboratory in America is the well-regulated American farm. Here the boys and girls study nature first hand. Here they observe the growth and life of plants and animals. Here they breathe pure air, become familiar with the beauties and wonders of the natural world. Here they make character. To have added to all these opportunities the advantages of a high school education with-

out any of the disadvantages that attend the spending of evenings without chores or home duties in the town is an educational condition that is almost ideal.'*

GUSTAVUS AND GREEN TOWNSHIPS.

"We wished to find centralized schools in a purely country township, where there was no village or village school, a place where country life was being preserved. We went thirty-five miles south of Ashtabula, and visited Gustavus and Green townships in Trumbull county. The first place visited was Gustavus. This township is exactly five miles square, as are all the townships of the Western Reserve, with the exception of those along the shore of Lake Erie. In Gustavus township the town hall is situated exactly in the center of the township, as is the case in Green township. Here was a church, a country store and postoffice, and a few houses.

"I had a picture of the centralized school of Gustavus, and was anxious to see the real thing. We saw it, and all was as represented. The school building is located in the center of the township. The school has been in operation two years. It is a four-room school, having a principal and three assistants. All the children of the township are brought to this central school, and nine wagons are enployed in the transportation.

"The wagons are provided with curtains, lap robes, soap stones, etc., for severe weather. The Board of Education exercises as much care in the selection of drivers as they do in teachers. The contract for each route is let out to the lowest responsible bidder, who is under bond to fulfill his obligations. The drivers are required to have the children on the school grounds at 8:45 a. m., which does away with tardiness, and to leave for home at 3:45 p. m. The wagons call at every farm house, where there are school children, the children thus stepping into the wagons at the roadside and are set down upon the school grounds. There is no tramping through the snow and mud, and attendance is much increased and far more regular. With the children under the control of responsible drivers there is no opportunity for vicious conversation or

*Western Journal of Education, June, 1903, page 428.

the terrorizing of the little ones by some bully as they trudge homeward through the snow and mud from the district school.

"During the school year 1898-99 there were enrolled in the grades below the high school eighty-two boys and fifty-two girls; in the high school room seventeen boys and thirty-five girls; making a total in the building of 186 pupils. * * *

"Keep in mind that this school is not in a village and the children are scattered over twenty-five square miles of territory. The children are not tardy. * * * Any one who stands in that building, looks at those children and wagons, must be convinced that here is the solution of the country school problem. Because

Wagons used in the transportation of children, Gustavus Township, Trumbull county, Ohio.
(Courtesy of Supt. O. J. Kern, Rockford, Ill.)

this problem is being solved in the country over six miles from the railroad. There is an organ in every room, and the walls are decorated with pictures. They have started a library. In the high school room were fifty-two enrolled, with fifty present. Here was an opportunity for the big boys on every farm to get higher education and still be at home evenings, secure from the temptations and dissipations of city life. They rode home in the wagons with the children of the lower grades and thus were able to be of service on the farm.

"The building is a frame structure, erected at a cost of $3000.

It is heated by steam. The principal gets $80 per month. * * * The drivers receive, respectively, $22, $30, $18, $25, $30, $32, $16, $30 and $17 per month, making an average of $1.25 per day. Before the adoption of the centralization the average daily attendance was 125 pupils. It has increased to 144 at the end of the second year, and the principal told us the attendance is increasing all the time. Before the schools were centralized the cost for the entire township was $2900. Now it is only $3156, being an increase of only $256 annually. And as to the character of the school, who will claim that the nine scattered schools were doing the work of a well-graded four-room school? There is absolutely no comparison. In order to keep the school and pay off the school bonds, the Township Board of Education made a levy of nine mills on a valuation of $373,000. There was opposition to the plan at first. * * * Those who were opposed to centralization of schools frankly acknowledge their mistake, and are found among the staunch supporters. We have found this true at every place we have visited.

"A special committee was sent from an adjoining county to investigate the Gustavus school. The committee was composed of one person opposed to the system and one in favor. They traveled over the township and talked to the people as we did. In their report, out of fifty-four families interviewed only one person with children was opposed; seven of those in favor were formerly strongly opposed, while none that were first in favor of the system are now opposed. The same committee adds: 'Although the system costs a little more (the belief is that it is cheaper after building is paid for), yet the people, as a whole, are highly pleased and are very enthusiastic and proud of their schools. Several of the neighboring townships, after carefully watching the system, have decided to centralize, and the growing opinion is that centralization is in harmony with educational progress.'

"The committee's report is certainly correct. Bear in mind, the roads in this township are but a trifle, if any, better than the average of Winnebago county. In fact, two or three townships of our county have, as a whole, better roads. The people are simply determined to have better school and will not allow obstacles to remain in the way of their children's fullest and freest development,

even if it does cost a few hundred dollars more per year for the entire township. * * * The average taxpayer would not know it. The testimony has been that after the new school building has been paid for that there is an actual saving per capita of children of school age in the township. Then think of the superior value of the new school over the old. It can not be a question of a few hundred dollars.'

"While we were at the Gustavus school the principal advised us to drive five miles to the west into Green township, where the people had centralized and put up a fine new brick building at a cost

Central School, Green Township, Trumbull County, Ohio.
(Courtesy of Supt. O. J. Kern, Rockford, Ill.)

of over $6000. The people of Green township had watched the school in Gustavus township for two years, and believed so thoroughly in the new plan that at the last April election they voted to centralize and bond the township for a long term to erect a new building. The vote was overwhelmingly in favor of the new school

"This building stands in the center of the township in a community distinctly country. There is no village beyond a store and postoffice, a town hall, a church or two, and a few dwellings. It is eleven miles from one railroad and six miles from another. It was built in 1900 at a cost of $6000. There are six school rooms

with two additional, one of which may serve as a library, and the other as an office and reception room. There is a basement under the entire building, part of which may be utilized for laboratory and gymnasium. The building is heated by steam.

"To this building are brought all the children of the entire township. The superiority of the educational influence of such a building over that of eight or nine widely scattered, neglected district buildings is beyond controversy, to say nothing in the way of sanitary improvement, in the way of seating, lighting, heating and ventilation. Such a building may be had in hundreds of townships of Illinois. It would not be a burden to any of the taxpayers of any township of Winnebago county. Bonds could be issued for thirty years' time, money could be borrowed at 4 per cent. The annual interest on $6000 at 4 per cent would be $240, an amount no larger than the repairs of seven or eight district school houses from year to year if kept as they should be. One-thirtieth of the principal, or $200 plus the annual interest, $240, would make a total cost of $440 for building purposes for the first year, decreasing every year afterwards as bonds were paid off. * * *

"They began this school in September last. The enrollment is 180, over 150 of last year in the scattered schools. Four teachers are employed. All children of the township are brought to the school, and eight wagons are employed in the transportation. The campus has about three acres. Shade trees, school decoration, library, etc., will come. How that school can be made the social, literary and musical center of the entire township! What an inspiration it must be to a corps of teachers to work in such a community as that.

"In the primary room were all the little ones of the entire township in a beautiful room, while in the high school room were many large farmer boys getting an education they could not otherwise gain."

WHAT ONE EARNEST TEACHER DID IN PUTNAM COUNTY.

The following account, taken from a recent number of *The Independent,* shows what one real live teacher with intelligence and energy can accomplish:

"In September, 1904, Mabel Carney, a young Irish girl just out

of the Normal School, began teaching in a country school in Magnolia Township, Putnam County, Ill. She had high ideals of the dignity of her work, was ambitious, hardworking, persistent. Her school was small, the building delapidated and poorly equipped, the site unattractive. Two neighboring schools were equally typical of a condition commonplace in every state in our country. * * * This Irish girl had been fired by the enthusiasm and success of the ideals set forth by O. J. Kern, of Winnebago County, and by the success of consolidation of schools in other states. She thought consolidation, dreamed consolidation and talked consolidation of these three inefficient country schools.

"She won hearers enough to put the question to a vote in the spring of 1905. The election voted down the proposition. The defeat but aroused more of the Irish persistence, Irish determination and Irish eloquence. In 1906 the three districts voted to consolidate. A sympathetic citizen, John Swaney, gave twenty-four acres for a campus. A *campus* for a country school! Eighteen thousand dollars voted by the people made the building one of the best school houses in Illinois. Wagons carry the children who are too remote from the building to walk. The principal of this country school is paid a salary of $1000. On the campus is an agricultural experiment plot of six acres conducted in co-operation with the Agricultural School of the State University. A four-year high school course is offered with liberal opportunity of election of studies. Country boys and girls may here study agronomy, animal husbandry, horticulture, domestic science and art, and all phases of work vitally related to the fundamental needs of a people living in the country. 'Culture' subjects are not neglected, but most of all, the real basic interests of culture among an agricultural people are given due emphasis. The culture here developing is more than a veneer. A well-graded elementary and high school course in a building of exceptional excellence, a campus of twenty-four acres devoted to agricultural work, a tract of splendid natural forest, an enlarged country neighborhood bound into a sympathetically co-operative social unity, an abiding interest in the best and the truest in real country life, possibilities for higher culture not inferior to those of cities of ten thousand people—these are the products of the two years of strenuous endeavor of the Irish girl with the dynamic ideal."

TRANSPORTATION CONTRACTS.

An idea of the method employed in letting contracts for transportation of pupils can be gotten from the following forms which are employed in Madison township, Lake county, Ohio,* and La Grange county, Indiana.

NOTICE TO BIDDERS.

Bids for the transportation of pupils of the Madison township schools, over the following routes, will be received at the office of township clerk until Friday, July 24, at 12 m.:

Route A. Beginning at county line on North Ridge road, and running west on said road to school house in District No. 12.

Route B. Beginning at Perry Line on the North Ridge road, and running east on said road to school house in District No. 12.

Route C. Beginning on Middle Ridge road, at residence of N. Badger, running thence west on said road to the residence of Rev. J. Sandford, thence north to school house in District No. 12.

Route D. Beginning at Perry Line on River road, and running thence east on said road to school house in District No. 6.

Route E. Beginning at the Hartman farm, thence by Bennett road to Chapel road, thence east to A. R. Monroe's, thence west on Chapel road to school house in District No. 13.

Route F. Beginning at residence of J. H. Clark, and running east on Chapel road to school house in District No. 13.

All whose bids are accepted will be required to sign a contract by which they agree:

1. To furnish a suitable vehicle with sufficient seating capacity, to convey all the pupils properly belonging to their route, and acceptable to the committee on transportation.

2. To furnish all necessary robes, blankets, etc., to keep the children comfortable; and in severe weather the conveyances must be properly heated by oil stoves or soap stones.

3. To provide a good and reliable team of horses, and a driver who is trustworthy, and who shall have control of all the pupils

*Copied here from the *Western Journal of Education*, June, 1903, pages 491-2.

while under his charge, and shall be responsible for their conduct. Said driver and team to be acceptable to the committee on transportation.

4. To deliver the pupils at their respective schools not earlier than 8:30 a. m., nor later than 8:50 a. m., and to leave at 4:05 p. m. (sun time).

Each contractor shall give bond for the faithful discharge of his contract in the sum of $100, with sureties approved by the president and clerk of the board.

The committee reserves the right to reject any and all bids.

By order of the committee,

C. G. ENSIGN, Clerk.

SCHOOL CONVEYANCE CONTRACT.

.....Township, LaGrange county, Indiana.

This article of agreement made and entered into this..... day of.....190.., by and between....., of LaGrange county, in the State of Indiana, and.....School Township, in the said county and state.

Witnesseth, That the said.....party of the first part, doth hereby agree to and with the said.....School Township, party of the second part, as follows, towit:

That the said.....will convey by spring hack all children herein stated.....

.....

and such other children of school age whose parents may later reside on the route or in the district.

The transportation route shall be as follows:

.....

.....

The said party of the first part further agrees to arrive at..... between.... a. m. and....a. m., standard (sun) time and leave said school house promptly at the close of each day's session and convey the foregoing pupils to their respective homes as expeditiously as possible in the same general manner as in the morning. He shall strictly prohibit profane or obscene language and boisterous conduct in or about the hack. The said party of the first part

further agrees not to use tobacco while in charge of the children, neither will he permit its use by any pupils in his custody. The pupils shall be conveyed with due regard to their comfort, and the team shall not only be safe, but reasonably speedy.

(Additional considerations.).....

.....

The services of the said party of the first part shall commence on the.....day of.....190.., and continue throughout the school year for such days as the school shall be in session.

The said party of the first part (or second) shall provide a comfortable and safe conveyance, and said vehicle shall be so constructed that it can be entirely closed during inclement weather.

(Additional consideration.).....

.....

The said party of the second part in consideration of the prompt fulfillment on the part of the party of the first part contracts and agrees to pay.....dollars per day for services rendered as above stated.

In case party of the first part fails, neglects, or refuses to faithfully do and perform each and every one of the covenants and agreements herein specified on his part to be performed, then this contract shall be null and void at the option of the party of the second part, and the party of the second part may immediately bring suit on the bond annexed hereto for any damages sustained to the party of the second part by reason of the failure of the party of the first part to perform his covenants and agreements herein contained.

In witness whereof, the above named parties have signed the above contract, this.....day of.....190..

Party of first part.....

Party of the second part.....

By.....Trustees.

Know all men by these presents, That we,..... and.....are held and bound to the State of Indiana, in the sum of.....dollars, for the payment of which we do bind ourselves jointly and severally. The condition of this obligation is such that we do hereby guarantee the full performance of

all conditions specified in said contract on the part of said..... to be kept.

Now if the said.....shall faithfully fulfill all the requirements mentioned, then this obligation to be void, otherwise to be and remain in full force.

Witness our hands and seals, this.....day of.....190..

.....(Seal.)

.....(Seal.)

State Superintendent Frank L. Jones, of Indiana, says, concerning the matter of transportation contracts: "I am not in favor of letting contracts for conveying pupils. It is not a matter which can be lumped off to the lowest bidder. It would be as sensible to employ teachers upon this basis. The law does not contemplate that the contracts for transportation should be made in this way. It is entirely proper for a trustee or advisory board or both to fix the amount that will be paid and then select the best man for the work at that price."

FLORIDA.

In Florida consolidation has been established in seventeen out of forty-four counties, and many more are favorable to it. The following by Superintendent Glenn, of Jacksonville, is the best account* found:

"Wisconsin and Mississippi and North Carolina write to Florida seeking our experience and method of transportation in Duval county, in connection with our centralization of rural schools during the last six years.

"In this county six years ago there were forty-five rural schools of one teacher each, for white children, established by former administrations. The work of these schools was so unsatisfactory in general, and the per capita of expense ran so high in many of them, that the present administration determined to reduce the number to fifteen of three teachers each.

"A statutory clause of the state provides that school children must not be required to walk to school more than one mile and a

*Annals of the American Academy of Social and Political Science, Sept., 1903, pages 14-16.

half. Hence, in choosing the sites for the centralized schools, the one having the greatest number of children within a radius of one mile and a half has generally been chosen. Seven of these schools are now in operation, each accommodating the children of about sixty to one hundred square miles of territory. Others will be established as rapidly as funds will permit.

"The concentration of the children who live more than one mile and a half from these new schools is accomplished by means of wagonettes, specially designed for the purpose, and provided by the board of public instruction at the public expense. They are of such capacity as to carry eight, ten, twelve, fourteen, sixteen, eighteen and twenty pupils, respectively, and cost from $70 to $100 each. Last year twenty-seven of these comfortable vehicles were running at an average cost of $23.33⅓. These twenty-seven vehicles enabled us to close twenty-four of the old one-teacher schools, the current cost of which had previously been $45.50 per month for each. Hence our transportation system now in operation produces a current saving of $462 per month over the old method. This gross saving was reduced by $225, the increase in salaries for assistant teachers at the centralized schools, and there was still left a net saving of $237 per month. During a single term of eight months this net saving amounts almost to the entire cost of the twenty-seven wagons, and since the life of a well-made wagon is about five years, four-fifths of this saving can be devoted to the extension of a new system and to better facilities for teaching. Therefore, even in a financial way, centralization in Duval county, Florida, is a decided success.

"Professionally there seems to be nothing objectionable, and of the many advantages the following are the more important:

"1. The teacher's work is so well organized that the average recitation period is doubled.

"2. The effort of the teacher is made more effective by means of adequate equipment.

"3. Truancy is wholly eliminated. The health of the pupils is preserved against bad weather and worse roads, but especially from the impure drinking water of former days.

"4. Many children, formerly so isolated as never to have access to any school, are now accommodated, to the advantage of the system financially.

"5. Local prejudice and family feuds are so completely submerged that one or two large families can not freeze out the teacher.

"6. As a sequence to all these favorable conditions the average attendance is increased 12½ per cent, giving a corresponding increase of school funds from the State.

"7. The country maiden may, and does, continue her education even on to the appreciative days of womanhood, without fear of molestation by the ubiquitous tramp or vagabond.

"8. The youth prolongs his school days to the ambitious verging into manhood, because his aspirations for intellectual progress have been encouraged—he has been given time and opportunity to think and to talk.

"9. The farmer and his family are becoming more content with their independent, self-sustaining occupation, preferring to have their children educated in the efficient rural schools, where, during the character-forming period of youth, ethical culture is free from the dissipations of social life as manifested in our cities.

"10. The development of the art of teaching by young aspirants is more feasible to the superintendent. His efforts at supervision are more frequent and more effective."

Ellis Geiger, superintendent of Clay county, says: "In the past two years the number of schools in the county has been decreased from fifty-one to forty-one. This has been done by merging five schools into one in one case, three into one in two instances, and two into one in two cases. In order to do this it has been necessary to transport some of the most distant pupils. The entire current expense per month of the larger schools thus created, including transportation and increased salaries, is about $100 less than that of the little schools which existed before. By this consolidation the attendance has been considerably increased and more efficient teaching has been made practicable. This educational movement is coming into favor with the people. (Biennial Report of Superintendent of Public Instruction for Florida, 1902, p. 253.)

MASSACHUSETTS.

In the year 1893 Seymour Rockwell, the veteran school committeeman of Montague, Mass., said: "For eighteen years we have had the best attendance from the transported children; no more

Public School-house in Mangum Township, Durham County, N. C., Before Consolidation of Districts.

New Public School-house in Same Township After Consolidation of Three Small Districts, Courtesy of Supt. J. Y. Joyner, State Superintendeni of Public Instruction of North Carolina.

sickness among them, and no more accidents. The children like the plan exceedingly. We have saved the town* at least $600 a year."†

In Masachusetts, in response to a circular of inquiry, "60 per cent of the towns report the cost as less, but the results better; 15 per cent cost the same but the results better; 8 per cent cost more but results better; 8 per cent cost more but results not stated; 8 per cent cost less but results not stated."‡

AUSTRALIA.

In Victoria, Australia, under the system of conveyance, 241 schools have been closed. The saving in closed schools amounts to about $71,000 per annum. The attendance is so regular and the system so popular that applications are constantly made for its extension."‖

BIBLIOGRAPHY.

Fuller information concerning consolidation of schools may be found by consulting the following:

The Western Journal of Education, June, 1903. (723 Market Street, San Francisco, Cal. Price, 15 cents.) This is a special number devoted to Consolidation of Schools, and gives an exceptionally good collection of reports and articles on this subject.

Report of the United States Commissioner of Education, for 1902, Vol. II, pp. 2353-2369. This article contains a brief list of the best state reports on consolidation, together with selected quotations and other information.

Proceedings and Addresses of the National Educational Association, for 1903, pp. 919-935. The first of the two articles in this volume contains a very full bibliography of the subject.

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*A "town" in Massachusetts corresponds to a township in other States.
†*Western Journal of Education*, June, 1903, page 458.
‡G. T. Fletcher, in *Western Journal of Education*, June, 1903, page 462.
‖*Western Journal of Education*, June, 1903, page 436. Quoted from Report of Minister of Public Instruction for Victoria, Australia.

APPENDIX

SCHOOL BUILDINGS FOR CONSOLIDATED RURAL SCHOOLS

BY

A. CASWELL ELLIS

So many new school buildings are now being built for consolidated rural schools and so many of those thus far built are so unsightly, so unhygienic, and so poorly planned, that it has been thought advisable to add to this third edition of this *Bulletin on Consolidation* a few building plans and some suggestions about school architecture in general. These are taken from the *Bulletin on School Buildings,* which has been issued by the University and will be sent free upon request.

THE COST OF UNHYGIENIC SCHOOL BUILDINGS.

In no other branch of architecture is there probably as much waste through ignorance as in the planning of school buildings. This waste arises in part from the construction of rooms of dimensions ill suited to school uses, from bad arrangement of cloak rooms, corridors, and stairs, and from waste in outside walls on account of many needless breaks and angles in the building, placed there by ignorant architects in vain attempts to hide their inability to make an artistic exterior for a simple dignified building. But the greatest waste through poor school architecture is not in money spent at first on the building, but in waste of time and energy of both the pupils and teachers who must use the building for the next twenty or more years. They must constantly lose through the inconvenient arrangement of rooms, through bad heating and ventilation and injurious lighting. This lowered vitality and weakened nervous power of the pupils and teachers are damages that even in the one-room country school will in a few years run up into the thousands of dollars—many times the entire cost of the building. One of the government departments in Washington recently moved its old clerk force from an old,

poorly lighted, badly ventilated building into a new building perfectly lighted and ventilated and conveniently planned. It was reported that the same clerks, working the same number of hours per day, actually did 25 per cent more work per month in this new hygienically constructed building. School work is unquestionably even more affected than routine clerks' work by unhygienic lighting, heating, and ventilation. But taking it on this same basis, and valuing an eight-year schooling to a boy at $400, or only $50 per year, let us see how much is wasted by an unhygienic building. The education which an average child gets from a year at school is, of course, worth to him in future life many times $50, but let us value it here merely at that. Then a 25 per cent increase in efficiency of work through a hygienic school building would add a $12.50 increase to the value of the education received by each pupil each year, or a total of $500 per year per room of 40 children. In twenty years at even this absurdly low valuation the unhygienic one-room school costs the district in loss of efficiency in the education of their children the sum of $10,000. The eight-room consolidated school would lose in this time in the same way $80,000.

AN EXPERT NEEDED IN PLANNING A SCHOOL BUILDING.

That school boards should so long have failed to appreciate the many delicate and vital problems of hygiene and of architecture involved in the planning of school buildings is not strange. The construction, heating, lighting, and sanitation of school buildings present special problems which even the general architect and the successful physician are not usually prepared to meet. Only once in a while do we find a school superintendent who is familiar with the studies which specialists have made along this line. In the ordinary dwelling only two or three people are in one room at a time, and these are usually moving about. If cold, they can move to the fire or radiator; if the day is dark, they can move near the window; if the sun shines brightly on their work, they can move away; if they become fatigued, they can change seats, move around, open a window, or go out for fresh air. The people in a crowded church or hall usually remain only an hour or two, and are not kept still and at hard mental work during this period.

In the school, on the contrary, each room must contain from thirty to sixty children for five hours a day; no one can move about at will; the boy farthest from the fire must be kept comfortable without overheating the boy next to the stove; every corner of the room must be lighted well on even the darkest day, and yet no direct sunlight must fall on any pupil's book; ten to twenty times the amout of fresh air needed in a dwelling room must be brought into a school room, and yet no child must be in a draft. Instead of half a dozen people coming in and going out, we have thirty to sixty young, active children from all grades of society with all sorts of physical constitutions and minor diseases crowded together in one room where chalk dust is constantly flying, required to remain quiet on hard benches and constantly use their eyes, ears, and nervous system for five hours a day. These are difficulties which the average school board does not notice, and the average architect does not appreciate. Until recently our most expensive school buildings have been built without expert advice from any school hygienist. The frightful increase of eye troubles, of nervous troubles, of digestive troubles, and of catarrh, as we go up the grades in our schools, and the lassitude and poor work found in these schools, are in a large measure due to this lack of proper hygienic consideration in planning the school houses and the school grounds.

REGULATIONS GOVERNING CONSTRUCTION OF SCHOOL BUILDINGS IN THIS AND OTHER COUNTRIES.

There is now going on a great reform in this line. Kansas City, St. Louis, Boston, New York, and other progressive cities have experts to examine all school plans. In Belgium all school plans must now be examined and approved by the *Bureau d' Hygiene* with regard to location, construction, lighting, heating, ventilation, drainage, closets, etc. In Germany all plans for school buildings or changes in old buildings must be approved by the district doctor. In Vienna the site must be approved by the doctor and the plans by a commission composed of skilled teachers, technical men, and medical men. In France, and in parts of England, the plans for school buildings must conform to certain hygienic and sanitary requirements fixed by law. Massachusetts, Vermont,

Connecticut, New York, Kentucky, and other States, have legal requirements as to ventilation or sanitation or playgrounds.

IMPORTANT POINTS TO CONSIDER IN PLANNING A SCHOOL BUILDING.

A conveniently arranged, properly lighted, ventilated, and heated school building, with artistic exterior costs little, if any, more than an unhygienic inconvenient building with an exterior made vulgar by shoddy tin ornaments and gingerbread work. There is no reason why the rural schools of Texas should not be as perfect models of hygienic construction and of artistic exterior as those of New York City or of St. Louis. It is primarily a matter of intelligence and not of money.

A full discussion of the most important points involved can be found in the University *Bulletin on School Buildings,* but here we will try to indicate, without giving reasons, a few of the most vital matters to be considered in planning a school building.

Lighting.

1. Never under any circumstances allow light to enter from windows in front of pupils, no matter whether high or low windows.

2. Always have the main light come from the left of the pupils.

3. A few windows at the rear of pupils are good for ventilation and not injurious for lighting, but a strong light behind is bad for teacher and pupils.

4. Windows to the right of the pupils are injurious to the eyes. If there must be an opening on the right for ventilation, then have small half windows high up, coming not lower than the top of the blackboard.

5. All windows should extend to within six inches of the ceiling, this six inches to be taken up by the window frame. If the architect tells you he can't do this, turn him off at once—he is too ignorant to be at large.

6. Do not scatter the windows evenly along the left wall of the school room with three or four feet of wall between each pair, but place all these windows in a group with the narrowest possible mullion in between.

7. A 7-foot window with 2-foot transom above (transom hinged at bottom to swing in at top), is ideal for a school room.

8. Allow at least one square foot of window space to every six square feet of floor space in a room; one to four is really better.

9. Never use pointed or curved top windows for lighting a school room.

10. Provide all windows with roller shades, arranged to roll up from the bottom of the window to the top, instead of down from the top to the bottom, as is usually done.

Heating and Ventilating.

1. All heating systems should at the same time furnish means of ventilating the room in cold weather without exposing children to drafts of cold air.

2. In buildings of four or more rooms, a central heating system should always be put in. It need not cost over two hundred dollars, and will soon save its original cost in fuel economy, to say nothing of the greater convenience and comfort of such a system. These central heating systems work perfectly in hundreds of buildings in Texas, but I have found nearly as many that were total failures, due to the fact that they were not properly installed. Always require your architect to submit his heating plans to an expert on heating before the plant is installed. Consult, also, the University *Bulletin on School Buildings,* pages 26-38.

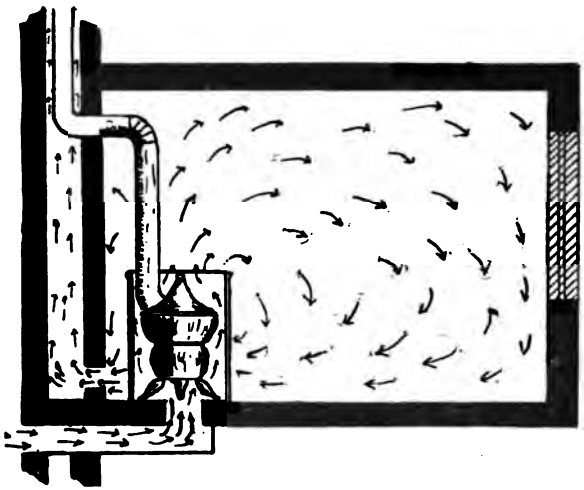
3. In one-room buildings always put a jacket around the stove, or buy a jacketed stove,* which admits constantly into the room a column of fresh air that passes first over the stove and is warmed before reaching the pupils. The accompanying cuts show how such jacketed stove works. For full description see *Bulletin on School Buildings,* pages 28 to 32. Any ordinary tinner can make any ordinary stove into a ventilating heater at slight cost.

School Rooms.

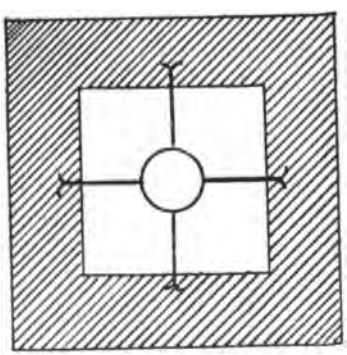
1. The school room should have 13½ feet pitch.

2. The school room should provide at least 16 square feet of floor space per pupil.

*The Grossius Ventilating Heater is a very satisfactory one.



Cut No. 12. Showing the improved circulation produced by the jacketed stove with fresh air admitted through a sliding door in the floor underneath the stove and passing up between the stove and the jacket. The hot air rises and produces a pressure in the room, forcing out the cold, bad air through the vent flue shown in the cut near the floor and just behind the stove. The circulation is further helped by extending the stove pipe into the vent flue, running it on up inside this flue to the top of the house. As soon as this pipe becomes heated from the stove, it heats the surorunding air in the flue, which rises and thus starts a suction in the flue and helps to draw out the cold air from the room below. The arrows indicate the direction of the currents of air in the room.

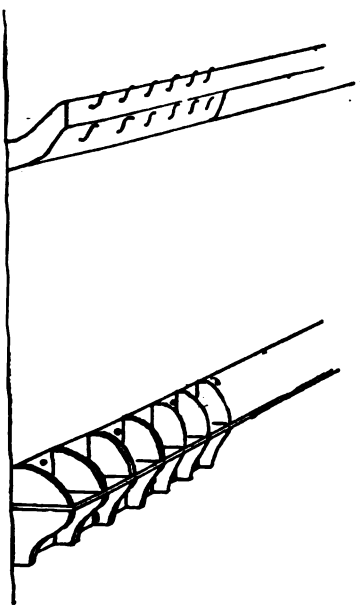


Cut No. 13. Showing cross-section of ventilating flue 24x24 inches, with six-inch pipe passing up the middle of it. This pipe, within the flue, should, of course, be built of extremely heavy galvanized iron, so as to avoid early rusting. If this can not be secured, then the smoke flue must be built on one side of the vent flue with only a thin brick partition between the two.

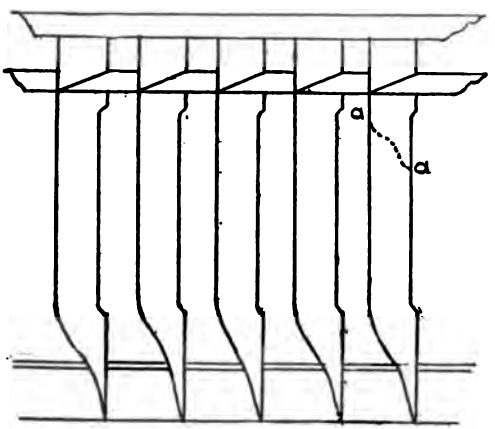
3. Floors should be made of special selected *rift sawed* hard pine and should have rubbed into them two coats of *boiling* linseed oil, into each gallon of which a pound of paraffine has been dissolved.

4. Twenty-four or five by thirty or thirty-one feet are standard sized rooms for elementary schools where forty-two pupils are in the room.

5. Use cement dado painted in place of wainscoting in both rooms and corridors.



Cut No. 14. Interior of cloak room for elementary school. Courtesy of Chas. D. Hine, Secretary State Board of Education of Connecticut.



Cut No. 15. Interior of cloak room for elementary school. From Shaw's School Hygiene. Courtesy of The Macmillan Co.

CLOAK ROOMS AND STAIRS.

1. Always provide a cloak room not less than five feet wide adjoining each elementary class room.

2. Never build inside unventilated cloak rooms, or rooms that ventilate only into the class room or corridor. Every cloak room should have one window giving ventilation from outside air.

3. , Every cloak room should have two doors, one opening into the corridor and one into the school room, but this entrance to the school room through the cloak room should never be the only entrance to the school room.

4. The accompanying cut gives two desirable plans for interior of cloak rooms. For full particulars consult the *Bulletin on School Buildings,* pp. 13-14.

5. All stairs should have not more than 6-inch rises with 11 or 12-inch treads.

6. Stairs should not usually be over 5 feet wide and should have railings on both sides small enough for children to hold by.

7. Do not locate stairs near furnace or other possible source of fire.

8. All walls surrounding stairs should be fireproof.

9. Two separate flights of stairs on opposite sides of the buildings should be provided.

10. Always provide one landing at least 4 feet wide about midway each flight of stairs.

11. Never have stairs where they are not well lighted.

BUILDING PLANS.

The following building plans are only suggestive:

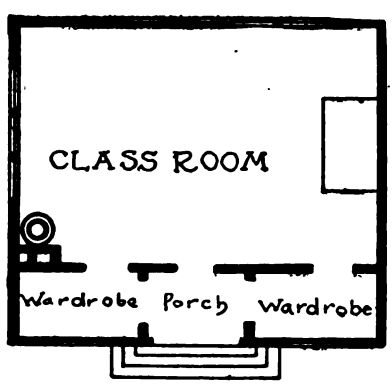
The direction in which a school must face and other local conditions and needs must always be considered. The cost of these buildings would be so different in different localities that we can not give accurate estimates here. We do not have, and can not furnish detailed plans and specifications for these buildings. For this an architect is needed. The usual fee of an architect is 2½ per cent far making plans and specifications and 2½ per cent for supervising construction. If the architect really knows his business, he richly earns his salary. The fee for planning a $6000 four-room brick building is only $150, and the fee for supervising construction is the same. The slightest economy or wisdom in arrangement of rooms would save many times the $150 fee. In construction, the chances for shoddy work and shoddy material are so great that only an architect is competent to watch and pass on the work of a contractor and protect the school board. On account of the ignorance

on the part of nearly all Texas architects of the principles of school hygiene and the special demands of school architecture, the writer has during the past year examined and criticised free of charge school buliding plans whenever requested to do so by school boards or school superintendents. As a result, there are now being built several school buildings in Texas incorporating the best principles of school architecture. In several cases, however, this labor has been in vain because the plans were not presented to him for criticism till after they had been practically adopted. As far as his other duties will permit, the writer will still be glad to help school boards and superintendents by examination and criticism of building plans, provided these are presented to him before it is too late to adopt such changes as he may show to be wise.

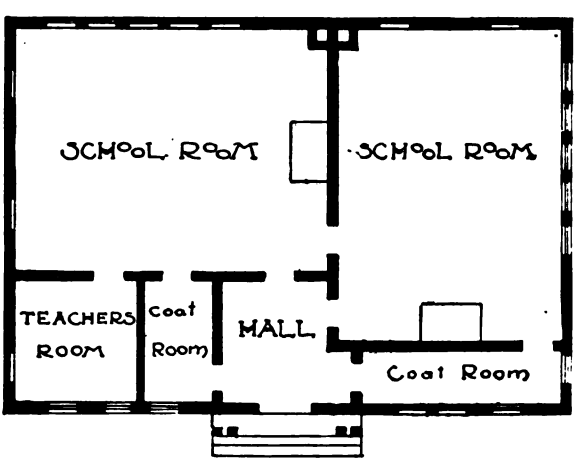
Most districts make the mistake of first voting building bonds and then looking about for a building plan, only to find that the building which they actually need costs a few hundred or a few thousand more than the value of the bond issue. It would be much wiser to have careful plans and estimates prepared first, in order to find what it will cost to build and equip such building as is actually needed, and then to vote bonds for this amount.

Making the class room 25x31 feet and the other rooms in proportion, we have here a plan for forty-two children that for econ-

omy, convenience, and hygiene can hardly be excelled, provided the building can be built to face north. For a west face, it would be fairly satisfactory, but not at all so for an east or a south face,

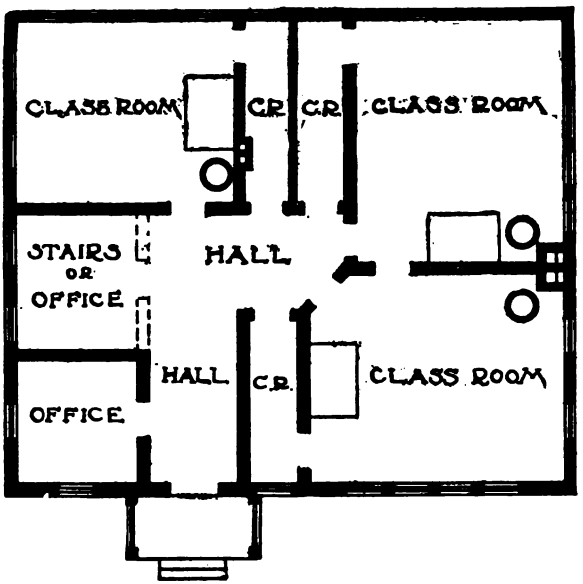


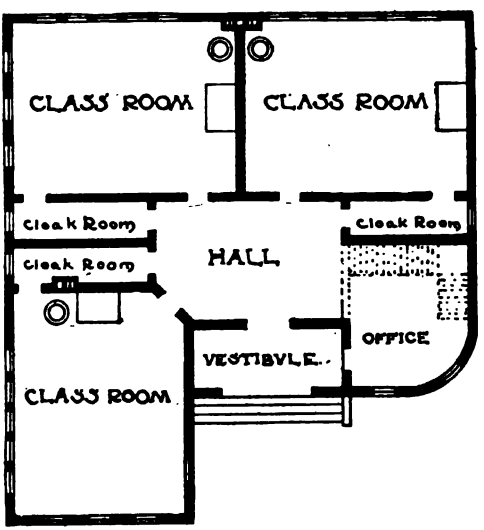
on account of the need of southern and eastern breezes in Texas. For plans suited to other facings, see *Bulletin on School Buildings.*



This building is especially adapted to a west facing or north facing. The belfry certainly is not ornamental and, unless positively needed, should be omitted.

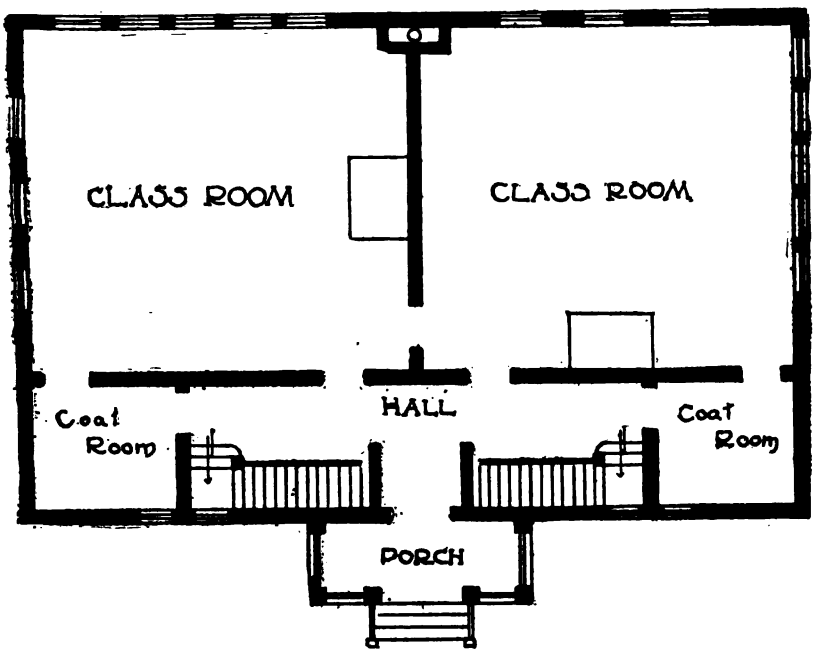
Each of these plans is adapted to one-story or two-story construction, furnishing three large and one small room on each floor.



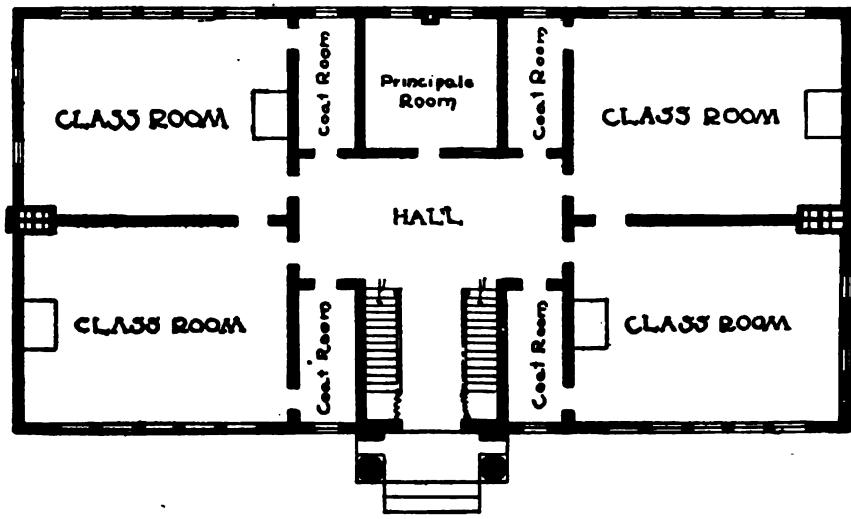


The square plan reaches the limit of economy without sacrificing convenience or hygienic construction.

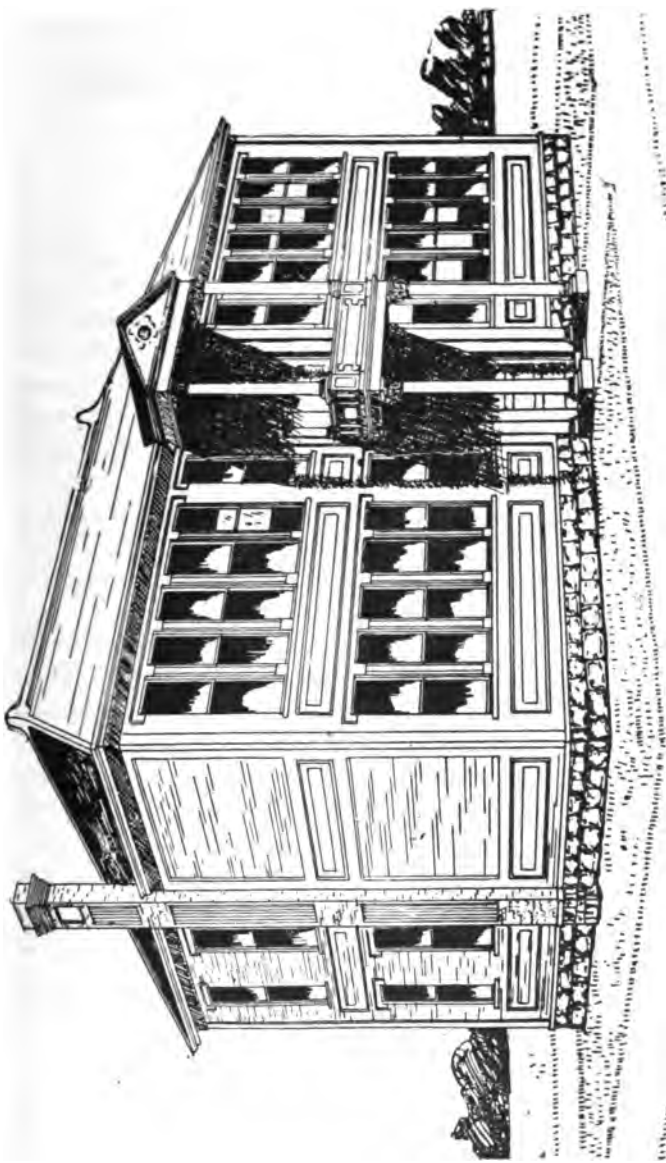
This plan, with second floor a duplicate of the first, can not be surpassed for economy or convenience. The lighting is also perfect. A rolling, or folding hinged door, partition between the two rooms on the first floor would provide a fairly good auditorium for public occasions. When this is done, the desks in one of the



rooms should not be screwed to the floor, but the rows of desks screwed to two long boards, 1¼x4, and made in sections of ten or twelve feet, which may be easily handled and changed. These boards need not be screwed to the floor at all, or only very lightly at each end.



This plan may be used satisfactorily for an eight-room, two-story building with an auditorium provided on first or second floor by a folding or rolling partition. Four basement rooms added for manual or domestic training will make this an admirable twelve-room county high school and consolidated rural school combined.



Perspective to go with floor plan on opposite page.

SUPPLEMENT

CONSOLIDATION IN TEXAS DURING THE PAST THREE YEARS

BY

A. CASWELL ELLIS

During the past winter a questionaire was sent to each county superintendent of public instruction and each ex-officio county superintendent in the State, requesting data concerning the number and variety of schools in his county and concerning the number of cases of consolidation which had taken place during the three years that have passed since the first edition of this Bulletin on Consolidation was issued. Of the forty-two counties which at that time had superintendents, thirty-nine replied promptly. No reply could ever be gotten from Superintendents Brown, of Hill county; Barcus, of McLennan county, and Lomax, of Robertson county, although two or three requests were mailed to each. Many of the superintendents were new in office, and could not give accurate records of consolidations of schools even during the past three years. Others understood that only white schools were to be considered, and omitted the negro schools from the list. The returns, therefore, are not complete nor absolutely accurate even for the counties having superintendents. The number of consolidations is probably greater than it shown.

In the thirty-nine counties having county superintendents who would answer my letters, there were reported as follows:

Schools having one teacher	2,668
Schools having two teachers	406
Schools having three teachers	82
Schools having four or more teachers	26

No independent districts are included in the above.

Cases of consolidation during the last three years of two schools	88
Cases of consolidation during the last three years of three schools	9
Cases of consolidation during the last three years of four or more schools	3

Replies were also received from 116 county judges, reporting for their counties, as follows:

Schools having one teacher	3,005
Schools having two teachers	358
Schools having three teachers	59
Schools having four or more teachers	44

No independent districts are included in the above.

Cases of consolidation during the last three years of two schools	59
Cases of consolidation during the last three years of three schools	6
Cases of consolidation during the last three years of four or more schools	0

It would thus seem that just one hundred consolidated rural schools have been established in the 39 counties having superintendents who reported, and 65 have been established in the 115 counties having county judges who reported. We have here reported nearly six thousand one-teacher schools. There are probably seven thousand or more such schools in our State. Our record shows that at least 351 such schools have consolidated during the past three years.

In my questionaire, each superintendent and judge was asked to state why more consolidation had not taken place. The answers to this question were quite uniform: First. Great distances in sparsely settled communities; second, bad roads; third, ignorance of the possibility and of the advantages of consolidation; fourth, legal difficulties.

One superintendent writes: "The schools in this county are too far apart, the distance varying from 12 to 50 miles. I travel over 1500 miles with ambulance in visiting. This county has nearly 150 miles river frontage and varies from 40 to nearly 80 miles wide." Such difficulties can, of course, be removed only by time. But probably two-thirds of the schools in the State are under no such handicap.

The following expressions, selected as representative from the replies of the superintendents, seem to me suggestive:

"The low tax limit for building houses prevents consolidation." This is undoubtedly a serious obstacle, but will be remedied by passing the amendment to the Constitution which is to be voted

on in November, 1908, and also by helping the Governor in his efforts to enforce the full rendition tax law.

"I am of the opinion that the community system and the want of proper supervision have been the principal causes preventing consolidation." One county judge writes: "I am doing what I can, but what can I do with eighteen weeks of the year given to holding court, with lunatics, paupers, roads, county convicts to look after, with duties as county purchasing agent and other duties galore?" Another judge replied: "I suppose you have reference to consolidation of school work, and the only way to bring this about successively is to associate your teachers together in institute work." Needless to say, consolidation of schools is not progressing very rapidly in this last county.

The community system was practically abolished by the last Legislature and this obstacle removed. The new law also passed requiring a county superintendent of public instruction in each county having 3000 scholastic population, now assures to 104 counties of the State a superintendent whose sole duty is the supervision of the common schools. While these superintendents are in the main men of high character and successful experience as teachers, they are, with few exceptions, almost wholly uninformed with regard to the details of their work as superintendents, and of the broader problems and possibilities of their positions. They recognize this need themselves and are making most commendable efforts to inform themselves and broaden their views through the County Superintendents Institute of the State, which they have already formed. The first meeting of this body was largely attended, and the papers and discussions showed thought and earnestness. This organization should bring a new life into the schools of Texas. But the State should not depend entirely upon voluntary efforts at qualification for the office after the election. The State should require a special examination for all who desire to become eligible to election as county superintendents. This should cover, in addition to first grade subjects, examination on such subjects as these: 1, School Buildings and Equipment; 2, Methods of teaching and equipping for Agricultural and School Gardens; 3, Methods of teaching, and the proper equipment for, Manual Training and Domestic Economy; 4, The County and State Organization and Administration of Schools, including study of what

is done in other States and countries, in organization, in districting and consolidation, in methods of selecting teachers, in organization of courses of study, in inspection of schools, etc., etc. The chief difficulty in requiring such an examination is the lack of any text-books or of any schools in the State through which a candidate could prepare for such an examination. The Legislature could and should provide means for the preparation of such needed books as Bulletins by the State Department of Education, and should provide for a full special course for county superintendents in the University Summer School. This simple but very valuable provision of requiring an eligibility examination for candidates for county superintendent would also incidentally go a long way toward "taking the office out of politics."

Two superintendents state that if the course of study in one-teacher schools were not allowed to cover all grades of pupils, that this would both give immediate impulse to the movement for consolidation, and would vastly improve the one-teacher schools that remain. This suggestion seems worthy of most serious consideration.

Two superintendents suggest that the standard required of teachers be raised higher, so that small school which could not afford to employ a good teacher, and were not alolwed to employ a poor one, would be compelled to consolidate.

Two others believe that the county superintendent should be given authority to discontinue small schools and consolidate at his discretion.

One judge thinks that the unit of administration should be the justice's precinct, and that the independent and common schools should all be under one and the same management. Another judge urges the establishment of the county unit system, as follows: "Is there any good reason why a county system should not be a unit like a city system, with one superintendent, one school board designating how many schools there shall be and where located, one county tax, teachers elected on recommendation of the superintendent and assigned to schools by him? There are districts two small for good schools that will *never* be changed by the vote of patrons. There are districts that will *never* levy special local tax. How can he earn this money paid him 'confering with teachers and trus-

tees,' 'visiting and examining schools,' 'advising,' and 'delivering lectures'?"

Two judges seem a bit pessimistic. One says: "Kill off about every third man and supply his place with one who thinks as much of his children as he does of his hogs, cattle and few bales of cotton. There are men who would be more than satisfied on the school question if they could have near their door a hen coop made of clapboards rived from a cottonwood log, provided there is painted somewhere on it the words, 'Skool House'—their imaginations readily supplying every necessary." The other says: "Parents are interested but little in education, being interested more in a bale-to-the-acre and 10-cent cotton. In my opinion, the only thing that can be done for consolidation of schools is to educate the boys and girls to the idea, wait until the present generation of parents dies and then consolidate."

The great majority of superintendents and judges are hopeful, and assert that the real obstacle in the way of consolidation is merely ignorance, and that the one primary necessity is a campaign of education among the patrons. One superintendent who reports nine consolidations in his county says: "Educate the people. Let them know that we are not doing for the children of Texas as much as other States are doing for their children. Men are willing to make sacrifices for their children if they but see the necessity for it." Another writes: "I believe the consolidation will come as soon as the patrons can understand the advantages to be gained by it." Others write as follows: "Lack of intelligent agitation in which the advantages of consolidation are clearly set forth." "As far as I know, it hasn't been discussed to any extent. The people need to realize the comparative value of large schools and small ones." "Our people do not appreciate the importance of consolidation, nor do they fully understand how it is to be accomplished." "The people must themselves be brought to understand the advantages of consolidation."

It was noticeable that those who spoke most hopefully of the value of a direct campaign with the patrons for education and consolidation are the very ones who by their numerous reported consolidations show that they have tried this plan, have succeeded, and know what they are talking about. Those who think legislative remedies are the primary hope, are, as a rule, those who report

little or no successful work in their own counties. Undoubtedly there are legislative hindrances which should be removed, and most of them will soon be removed, but the one great cause of delay in consolidating the present inefficient little country schools is ignorance on the part of patrons of the advantages to be derived from consolidation, and ignorance and incompetence on the part of county superintendents and county judges. The one great need is truly a campaign of education and for education. As a help in this campaign, the University offers this Bulletin. As long as the supply lasts, any superintendent desiring to carry on a campaign for consolidation of schools can secure a supply for free distribution free upon application.

THE HORNSBY-DUNLAP CONSOLITATED SCHOOL IN TRAVIS COUNTY.

By Carl Hartman, County Superintendent, Travis County.

For years the Hornsby School and the Dunlap School, situated three and one-half miles apart on the Austin-Webberville road, had been jogging along at a peaceful gait. The schools were as good as other country schools; perhaps a little better than the average one-teacher school generally gets to be.

But conditions were not what they ought to have been. The patrons of both schools saw that their children were losing valuable time under the one-teacher plan of management, and some were sending their children to town schools at an enormous cost. Furthermore, even those who could afford to send their children off to school were not slow in recognizing the wholesome influence of home and country environment at the impressionable age of childhood and the consequent advantages of educating their children "right at home."

Late in the summer of 1905 the present county superintendent received a letter from Mrs. A. I. McEachern inquiring as to the manner of procedure to secure a new schoolhouse in place of the old and nearly worn-out Dunlap Schoolhouse No. 33. In reply the good lady was advised not to agitate the building of a new Dunlap Schoolhouse, but a new Hornsby-Dunlap Consolidated Schoolhouse on midway ground between the two. As to the manner of procedure, the organization of a Mother's Club was recommended for waging the campaign. And right skillfully did the ladies manage affairs, for when the first public meeting was called at the Dunlap School in the winter of 1905-06 the men had already been converted to the idea of consolidation, and it was only necessary to perfect the *modus operandi*.

The petition circulated in the two districts contained sixty-nine names, of which sixty-eight signed "for consolidation," and only one signed "against consolidation." The commissioners court

passed the order to consolidate early in 1906. Messrs. W. M. Jones, H. T. Bowman and J. M. Hornsby were appointed to be the first trustees. A local tax of 10 cents on the $100 valuation was also voted for incidental expenses.

After these preliminaries had been arranged the work for the trustees had only begun. "Talk is cheap, but it takes money to build a schoolhouse." The people, however, were interested, and the three trustees appointed were the best in the State—sensible, business-like, honorable, self-sacrificing and devoted to a purpose. As a result, after two weeks' solicitation, several thousand dollars

had been subscribed, all of which was contributed by the residents of the district.

The grounds selected for the school site lies on the former district line, thus occupying a central location, and were donated to the district by Mr. and Mrs. Will Bowman. A primeval postoak forest held the grounds, and the trees had merely to be thinned out to make a beautiful shady plot. Here stands the present three-room schoolhouse, by the roadside, well-lighted and ventilated, and well furnished, a pride to every man, woman and child who has a dollar in it.

The school was a success over the old plan from the first, as seen from testimonials given below. It was graded and the teachers' work was satisfactory. Further improvements will be made, for the Hornsby-Dunlap citizens say, with one accord, "Onward, ever Onward."

VIEWS OF THE PATRONS AFTER ONE YEAR OF CONSOLIDATION.

I think that the present plan of managing and conducting our school is a great improvement over the old method.

W. M. ROBERTSON.

This is to certify that I am pleased with the manner in which

the school has been conducted, and that I heartily endorse the consolidation idea.

R. E. LEE.

I think the consolidated school has superior advantages over the old one.

MRS. W. M. JONES.

I am very well satisfied with the consolidated school and think that it is better than the one before, because it gives us more teachers and a better opportunity for the pupil.

J. W. BURLESON.

We are very much pleased with our consolidated school. The first term was better than we anticipated. It is much better than one teacher with a crowded school.

MRS. A. I. MCEACHERN.

I think the school has been superior to any school we have ever had and has been a success. A. FONVILL.

I consider the new plan a great improvement over the old. The teachers have more time to instruct, the classes are larger and the interest greater than is possible in the one-room school. I am highly pleased with the success of the school under the present management. JESSE HORNSBY.

I think the present consolidated school is far superior to the one-room school in many respects. It is evident that it does give the children in the country equal advantages in many respects to the high school in the city; therefore, I certainly endorse the consolidated school. J. T. FLOW.

There is no comparison between the two plans, the present plan is so superior to the old one. MOLLIE L. PLATT.

I am well pleased with the school and heartily endorse the management for the past term. I think it a great improvement over the old plan. PLEASANT LEE.

The present plan has many advantages over the old one. Among them I would mention better organization, greater interest, and a longer term. In my opinion, consolidation is a great success.
R. A. HORNSBY.

I am well pleased with the new plan. I think it is a success and that it has many advantages over the one-teacher plan.
PAUL ROWE.

I think the consolidation of the Hornsby and Dunlap schools will be the means of better educational advantages for our children. MRS. J. M. HORNSBY.

I am in hearty accord with the idea of the consolidated school. With it we have the advantages of a graded school in the country—a graded school adapted to country conditions. It is far superior to the one-room, one-teacher school. AUGUST FOSTER.

The year just passed was the first of our consolidated school, and I am more convinced that consolidation is far best for the country schools when possible. The year that has just closed has proven to be the best in the history of our school. H. T. BOWMAN.

The consolidated school is far better than the old, as it enables the communities to work together with the teachers and children, systematize matters, grade the children as they should be, and let them progress, instead of losing two or three months each year.
JOHN R. HUNTER, M. D.

I think the present school much better than the old ones.
R. H. WILLIAMS.

We find many advantages in the consolidated school. Among them I would mention better grading, greater interest on the part of pupils and patrons, better attendance, and more thorough instruction. The whole community has been drawn closer together by the common interest. J. N. LITTLEPAGE.

COURSE OF STUDY OF THE HORNSBY-DUNLAP CONSOLIDATED SCHOOL.

PRIMARY DEPARTMENT.

FIRST GRADE—LOW DIVISION.

Reading.—Wheeler's Primer. Words and sentences taught from chart and blackboard. Meaning of words taught by use of objects and pictures. Give careful attention to position. Drill in articulation. Supplemental reading, Glimpses of Nature, etc.

Spelling.—Words from reading lesson copied from blackboard and chart. Oral drills after the first few weeks.

Language.—Objects and pictures described, stories read or narrated by teacher told by pupils. Memory gems.

Numbers.—Daily oral lesson with objects. Develop the ideas of number, addition and subtraction. Drill in easy combinations according to ability of pupils.

Writing and Drawing.—As directed.

General Lessons.—Color, form, plants, etc.

Music and Physical Exercises.—Simple songs and exercises as directed by the teacher.

FIRST GRADE—HIGH DIVISION.

Reading.—Graded classics, Book I. Continue use of chart and blackboard as in lower division. Give careful attention to position and articulation. Vocal drills and breathing exercises. Easy sight reading.

Spelling.—Words of other lessons copied as in lower division. Frequent oral drills. Train to correct spelling from the beginning.

Language.—Continue methods of lower division. Make every recitation an exercise in language. Pupils use complete sentences. Train to the use of capital letters, beginning sentences and proper names, and the period at close of sentence. Drill in reproducing short stories orally and in writing. Suitable memory gems add interest, train the memory and form an early taste for literature.

Number.—Daily lessons with objects continued. Develop ideas of multiplication and division. Easy problems with concrete numbers, oral and written.

Writing and Drawing.—As directed.

General Lessons.—Nature study, form, color, etc.

Music and Physical Exercises.—As in lower division.

SECOND GRADE.

Reading.—Graded Classics, Book II, supplemented by the Heath Second Reader and other supplemental work to be selected.

Spelling.—Words from reading and other lessons, written and spelled orally. First fifty lessons from Spelling Book. Drill on diacritical marks.

Language.—Continue work as in first grade. Pupils reproduce orally and in writing stories and parts of reading lesson; describe

pictures or objects, and commit to memory selections assigned by the teacher. Much care should be given to the written work. Train to neatness and accuracy.

Numbers.—Oral work continued. Written work supplied by teacher. Simpler weights and measures taught objectively.

Writing and Drawing.—As directed.

General Lessons.—Nature study, manners and morals, kindness to animals, health lessons, home geography, etc.

Music and Physical Exercises.—As in preceding grade.

THIRD GRADE.

Reading.—Graded Classics, Book I, supplemented by Heath Reader, history stories, and other selected supplemental work. Selections memorized. Pupils may be taught to use the dictionary the latter half of the year.

Spelling.—Modern Spelling Book, lessons 51 to 180. Oral and written work. Drill in elementary sounds.

Language.—Hyde's Practical Lessons, Parts I and II. Memory gems. Frequent easy exercises in written composition.

Numbers.—Lower Book to page 80. Mental arithmetic to page 27. A great deal of supplemental work given by the teacher. Use easy numbers and drill to secure accuracy, neatness, and rapidity.

Geography.—Matter included in first thirty pages of Maury's Elemntary. These lessons may be given orally, using objects, maps, charts, and blackboard. See State Course of Study, pages 30 and 31.

Writing and Drawing.—As directed.

General Lessons.—Agricultural nature study, Morals and Manners, health lessons, etc.

Music and Physical Exercises.—As in preceding grades.

INTERMEDIATE DEPARTMENT.

FOURTH GRADE.

Reading.—Stickney's Fourth Reader, supplemented by stories from history, Elements of Agriculture, selected classics, etc. Choice selections memorized. Each pupil must have a dictionary and use it in learning the meaning and pronunciation of words.

Spelling.—Modern Spelling Book, Part First, completed and reviewed. Teacher should study carefully all that is given on the subject in the State Course of Study.

Language.—Hyde's Practical Lessons completed. Frequent exercises in composition. Some good material is found in Elements of Agriculture. Teacher will supply other interesting subjects.

Arithmetic.—Lower Book to page 162. Mental Arithmetic to page 50. Supplemental work given by teacher. Give practical problems and train to accuracy, neatness and rapidity.

Geography.—Maury's Elementary completed. See State Course of Study, pages 39 to 41.

Writing and Drawing.—As directed.

FIFTH GRADE.

Reading.—Stickney's Fifth Reader, supplemented by The Young Citizen, history stories, and selected classics. Selections memorized.

History.—Beginner's History of the United States.

Spelling.—Modern Spelling Book to page 118.

Grammar.—Hyde's Practical to Part III. Frequent exercises in composition.

Arithmetic.—Lower Book completed. Mental Arithmetic to page 80. Practical problems not found in book. Pupils drilled to work rapidly with neatnes and accuracy.

Geography.—Maury's Manual to South America.

Physiology.—Coleman Physiology for Beginners. May alternate with Agriculture, 4th and 5th grades.

Writing and Drawing.—As directed.

Agriculture.—As directed.

SIXTH GRADE.

Reading.—Fifth or Sixth Reader. Text to be chosen. Selected classics.

History.—Pennybacker's Texas History.

Spelling.—Modern Spelling Book completed.

Grammar.—Hyde's Practical Exercises in Composition.

Arithmetic.—Higher Book to page 122. Mental Arithmetic to page 103.

Geography.—Maury's Manual to Asia.

Physiology.—Conn's Elementary Physiology and Hygiene.
Agriculture.—May alternate with physiology.
Writing and Drawing.—As directed.

ADVANCED DEPARTMENT.

SEVENTH GRADE.

Reading.—Selections from literature. Shoice selections memorized. Current Events.
U. S. History.—Our Country.
Grammar.—Sisk's Grammar as a Science.
Composition.—Welsh's English Composition with supplemental work.
Arithmetic.—Higher to page 224. Mental Arithmetic to page 183.
Algebra.—Well's Essentials to page 183.
Geography.—Maury's Manual or Maury's Physical.
Agriculture.—Agriculture for Beginners, Burket, Stevens and Hill.
Writing and Drawing.—As directed.

EIGHTH GRADE.

Literature.—Selected classics.
U. S. History.—Our Country completed.
Civil Government.—Texas and the Nation.
Spelling.—As directed.
Arithmetic.—Higher Book completed. Mental Arithmetic completed.
Algebra.—Well's Essentials to page 260.
Physical Geography.—Maury's completed.
Agriculture.—Agriculture for Beginners.
Writing and Drawing.—As directed.

NINTH GRADE.

Literature and Composition.—Text to be selected.
History.—Myer's General.

Spelling.—As directed.

Mathematics.—Algebra, completed. Plane Geometry, Wentworth.

Science.—Physics, Coleman.

Agriculture.—As directed.

Writing and Drawing.—As directed.

THE BONO CONSOLIDATED SCHOOL IN JOHNSON COUNTY.

The following account written by Superintendent H. J. Ridings is taken from the *Cleburne Enterprise:*

"Bono is a small village eight miles west of Cleburne on the Cleburne and Glenrose road. There are two stores, a blacksmith shop, a gin, two churches and a most enthusiastic school.

"For several years the people of this and the adjoining districts have felt the need of a good school. So a few of the most zealous citizens brought the matter not only before their own community, but proposed to the people of the Belnap district to the west, and to those of the Harmony district on the north that they unite the three districts into one strong, efficient school community, build a good house and maintain such a course of study as would give their boys and girls a fairly good education without sending them from home.

"In a few weeks they had secured subscriptions to the amount of $5000, and at once let a contract for a house to cost that amount. Since, the building has been provided with seats, chapel organ and other necessary equipments at an additional cost of $1500, making the total cost of building and its furnishings $6500. Without a jar or scism all these expenses have been cheerfully met by the united communities. And through diligent inquiry I have not been able to learn of a man dissatisfied with the consolidation.

"Prof. G. E. Warren is principal, Miss Mary Page has the intermediate grades and Miss Anna Brown has the primary work. Each teacher has three grades of work.

"I noticed in this school young men and young ladies who have not attended school for several years, and whose yearning for an education had almost ceased. Any parent interested in the edu-

cational welfare of his child will be readily convinced of the advantage of the well organized, graded school over the unorganized, ungraded school, by spending a few hours in the two kinds of schools, and comparing their work.

"Will all the patrons of the country schools of this county, anxious to give your children educational opportunities, consider these comparisons?

"1. That the present Bono school was formed by uniting three small districts into one strong, efficient district.

The Bono Consolidated School, Johnson County.

"2. That each of the houses of the three districts was poor, old and unattractive, and in their place is a large two-story, well-heated, properly ventilated, beautiful building.

"3. That the three schools averaged about five months each during the year, with an irregular attendance of about 125 pupils for the three, whereas in the consolidated school the term is seven months, with an attendance of 175 pupils.

"4. That the salaries of the three teachers of the three differ-

Old school buildings abandoned when these districts consolidated with the Bono district.

ent schools was $130 per month, while the consolidated school it is $180 for the three teachers per month.

"5. That in the three different schools each teacher taught seven grades, while in the consolidated school each teacher is teaching three grades. Which do you think, one man with the same team and tools could cltivate better 30 acres of cotton or 70 acres?

"6. That some have to come further to school than before; instead of the attendance decreasing, it has increased. In the primary room where it seems that distance would most affect the attendance, I learned that the teacher of that department had enrolled 74 pupils. Of the three grades in her room, over half were in the first grade.

"These comparisons are conclusive that the centralized schools can do better work and are more satisfactory to the people when once established.

"In the example just given of the Bono school, it is shown that the cost per capita is decreased, the school term is increased, and the school has a force of teachers at better salaries and with opportunities to do better work.

"Now I would not have you think that I believe all the schools of this county can be centralized so as to have $5000 school buildings, but I do believe that a great many schools can be consolidated, that the pupils farthest away would not have to come more than two or two and one-half miles, and that such consolidations could build houses to cost from $1000 to $3000, support two or three teachers and have longer terms of school. With these larger schools, good comfortable buildings, two or three teachers, well-arranged courses of study, all these things would combine to make a keen interest in the school at home. In my humble judgment it is the only way to save the country schools."

CONSOLIDATION IN WALKER COUNTY.

A typical school building in District No. 6, Walker county, before consolidation. These schools were taught by teachers holding second-grade certificates, and the attendance was small.

Back view of the school building in District No. 6, Walker Co., after consolidation

This school now has four teachers with first-grade permanent certificates, four comfortable, well-lighted and well-furnished school rooms. It ministers to a district of approximately twenty-five square miles. There are several other cases of consolidation in Walker county, about which Superintendent S. C. Wilson writes, as follows: "There has never been a single case where schools have consolidated that the people did not, after a short time, become thoroughly converted and satisfied with the plan."

THE SOUTH PARK CONSOLIDATED SCHOOL, JEFFERSON COUNTY.

The South Park and the Spindle Top school districts just outside of Beaumont have both grown rapidly in recent years because of the oil discoveries. The South Park district was about eight miles long and three or four miles broad. In 1906-07 there was a white scholastic population of 350. Four teachers were employed. The district owned a two-room school building and rented rooms in a nearby store for two teachers. The Spindle Top school was established in the oil field in 1903, and in 1906-07 employed two teachers, who taught in two poor school rooms very unfavorably located. These two districts have now consolidated, voted $23,000 school building bonds, have purchased a lot containing about six acres located on the shell road, are erecting a fine modern school building with eight rooms and an auditorium, will employ six teachers, and offer a well-graded school with a nine-months' term. Wagonettes will be used to transport pupils who live at great distance from the school. On account of the nearness of the Beaumont High School, it was thought best to establish only eight grades of work in this school, and to form an affiliation with the Beaumont High School through which children completing the course of the South Park School are allowed to go on through the Beaumont High School course. [It was hoped that a cut of this fine building could be printed in this Bulletin, but thus far the editor has been unsuccessful in his attempts to secure a satisfactory picture. We are indebted to Superintendent M. L. Moody for the brief account which is given above.]

A typical school building in District
These schools were taught by teacher.
attendance was small.

Back view of the school building in District No. 6, Walker Co., after

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GENERAL SERIES

1. *The University of Texas Record*, vol. v, no. 3, March, 1904.
2. *Alumni Notes*. 13 p., March, 1904.
3. *Some Wholesome Educational Statistics*, by W. S. Sutton. 12 p., illus. March, 1904. 10 cents.
4. *Courses of Study in Law Pursued in the University of Texas*, by J. C. Townes. 16 p. March, 1904. Out of print.
5. *Notes Concerning the Progress of the University*, by Wilson Williams, Registrar. 3 p., 1904. Out of print.
6. *The University of Texas Record*, vol. v., no. 4, July, 1904.
7. *The Consolidation of Rural Schools*, by Una Bedichek and G. T. Baskett. New edition, enlarged by A. C. Ellis. 85 p., illus. Nov., 1907. 25 cents.
8. *The Pride of Texans and Their University*, by T. H. Montgomery, Jr. 5 p. November, 1904. Out of print.
9. *Letter to Alumni Regarding the Proposed Law School Building*. 2 p. December, 1904. Out of print.
10. *Views of the University of Texas*. 42 p., illus., n. d. 20 cents.
11. *What Should be Done by Universities to Foster the Professional Education of Teachers?* by W. S. Sutton. 24 p. 1905. 15 cents.
12. *The University of Texas Record*, vol. vi, no. 1, February, 1905.
13. *School Buildings*, by A. C. Ellis and Hugo Kuehne. 119 p., illus. pl. June, 1905. 30 cents.
14. *The University of Texas Record*, vol. vi, no. 2, September, 1905.
15. *The Teaching of Agriculture in the Public Schools*, by A. C. Ellis. 56 p., illus. December, 1906. 25 cents.
16. *A Study in School Supervision*, by Carl Hartman. 180 p. 1907. 50 cents.

HUMANISTIC SERIES

1. *The Trans-Isthmian Canal: a Study in American Diplomatic History (1825-1904)*, by C. H. Huberich. 31 p. March, 1904. 25 cents. Out of print.
2. *The Evolution of "Causa" in the Contractual Obligations of the Civil Law*, by Samuel Peterson. 24 p. January, 1905. 25 cents. Out of print.
3. *De Witt's Colony*, by Ethel Z. Rather. 99 p., 4 maps. 1905. 35 cents.
4. *Some Fundamental Political Principles Applied to Municipal Government*, by Samuel Peterson; and *Evans University Prize Orations*, by A. D. Robertson, K. S. Dargan, Jr., Edward Crane, R. J. Channel. 39 p. June, 1905. 15 cents.
5. *The Grotesque in the Poetry of Robert Browning*, by Lily B. Campbell. 41 p. April, 1907. 25 cents.

*The *Record* is no longer issued in this series, but bears its volume and number, as heretofore.

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SCIENTIFIC SERIES

1-4. *Contributions from the Zoological Laboratory of The University of Texas.* Reprints from various journals. 1904-05. Out of print. Later contributions appear in the Reprint Series.

5. *Test of a Vertical Triple Expansion High-Duty Pumping Engine in Operation at the Water Works, San Antonio, Texas,* by A. C. Scott. 52 p., illus. pl. June, 1905. 35 cents.

6. *Vegetation in the Sotol Country in Texas,* by W. L. Bray. 24 p., pl. June, 1905. 25 cents.

7. *Observations on the Habits of Some Solitary Wasps of Texas,* by Carl Hartman. 72 p., pl. July, 1905. 25 cents.

8. *The Protection of Our Native Birds,* by T. H. Montgomery, Jr. 30 p. October, 1906. 25 cents.

9. *The Austin Electric Railway System,* by members of the Senior Class in Electrical Engineering, 1906. 123 p., illus. pl. 1906. 50 cents.

10. *Distribution and Adaptation of the Vegetation of Texas,* by W. L. Bray, 108 p., pl. map. November, 1906. 35 cents.

11. *A Sketch of the Geology of the Chisos Country,* by J. A. Udden. 101 p. April, 1907. 50 cents.

REPRINT SERIES

1. *A Semantic Study of the Indo-Iranian Nasal Verbs,* by E. W. Fay. From the American Journal of Philology, 25:369-389 and 26:172-203, 377-408. March, 1906. Out of print.

2. *Contributions from the Zoological Laboratory of the University of Texas.* From various journals. May, 1906. Out of print.

3. *Latin, Greek, and Sanskrit Word Studies,* by E. W. Fay. From various journals. November, 1907. Out of print.

MEDICAL SERIES

1. *Yellow Fever: a Popular Lecture,* by James Carroll. 32 p. June, 1905. 15 cents.

2. *The Care of the Insane,* by Dr. M. L. Graves. 16 p. 1905. 15 cents.

3. *The 1903 Epidemic of Yellow Fever in Texas, and the Lesson to be Learned from It,* by Dr. G. R. Tabor. 22 p. June, 1905. 15 cents.

In addition to the bulletins above named are the following:

a. The Official Series, which includes catalogues, Regents' Reports, and administrative bulletins.

b. About 25 bulletins issued before March, 1904, when the division into series began.

c. *The University of Texas Record,* formerly, but no longer, included in the General Series. Numbers of the *Record* have been issued from two to four times a year since December, 1898, and it is now in its 8th volume. A general index to the first six volumes may be found in volume 6.

Requests for Bulletins should be addressed to the University of Texas Bulletin, Austin, Texas.